



John Lee, Deputy Director

Office of Sustainability

New York City

At the New York City Council

Committee on Environmental Protection

Respecting Proposed Intro. 578

April 29, 2015

Good morning, Chair Richards and members of the committee. I am John Lee, Deputy Director for Buildings and Energy Efficiency in the Mayor's Office of Sustainability. Thank you for the opportunity to testify today on Introduction 578 in relation to limiting nighttime illumination for certain buildings. I am joined by Mark Silberman, General Counsel of the Landmarks Preservation Commission; and from the Department of Environmental Protection, Michael Gilsenan, Assistant Commissioner for Environmental Compliance, and Rick Muller, Director of

Legislative Affairs and Correspondence. The Mayor and the Office of Sustainability applaud Speaker Mark-Viverito, Council Member Richards and the City Council for addressing this important effort to curb energy waste and restore our night skies.

Just last week on Earth Day, the Mayor set forth One New York: the Plan for a Strong and Just City. Through this plan, our City will build upon our global leadership in growth, sustainability, and resiliency—and embrace equity as central to that work. One NYC is a blueprint of the New York City we want our children to inherit. The actions we take now will ensure we have a healthier environment, a dynamic, inclusive economy, more affordable housing, and infrastructure that is reliable and resilient. The initiatives of the plan address every aspect of life in New York City—how we live, work, learn, and play; and achieving these goals need innovative solutions.

As part of the One NYC goal to become the world's most sustainable large city and to fight against climate change, the plan calls for reducing light pollution from buildings at night. Light pollution exists in every borough but is worse in dense urban districts. Light pollution affects the quality of life for New Yorkers, as well as animals, in particular birds. The Hudson River is one of the most important migratory flyways in North America, and light pollution can throw off birds and other animals who look for cues to stay on course. In addition, lights that are left on in empty offices and retail spaces at night waste electricity and contributes to greenhouse gas emissions. Mayor de Blasio last September announced that we will cut our greenhouse gas emissions 80% by 2050, and reducing unnecessary lighting would help us meet that goal.

As a result, the Mayor's Office of Sustainability is pleased to testify in general in support of the intended goals of Introduction 578. In that spirit, we would like to offer some initial suggestions that would help make the bill more workable and effective. The comments that I am presenting today represent the initial thoughts of the Mayor's Office and City agencies in the service of New Yorkers. We are looking forward to hearing and reviewing the testimony of other important stakeholders to ensure that we fully understand their concerns.

The bill, as introduced, places the specific restrictions and requirements along with the enforcement authority within the regulations of the Department of Environmental Protection. The Mayor's Office is working across multiple City agencies to determine who would be most effective in carrying out oversight and enforcement. We look forward to working with the Council and City agencies to properly address and assign oversight and enforcement authority to ensure the intended results of this bill.

Second, the bill as introduced would place civil penalties against building owners for violations of wasteful lighting in unoccupied spaces. However, in many instances in these buildings, it is the commercial tenants who control their own lighting. As a result, the legislation as currently drafted may place an undue burden upon building owners who may not have direct control over tenant activities. We would like to work with the Council to assign penalties appropriately.

We also must ensure the bill strikes the right balance between its laudable environmental goals and adequate lighting as a deterrent against crime. Adequate lighting also supports the efficacy of surveillance cameras, both as a deterrent and

as helpful evidence in criminal investigations, as well as allows police officers responding to burglar alarms or other calls for service to better observe the conditions they face. We welcome a continuing discussion regarding the ability of a property owner to help ensure the safety of his or her premises and the surrounding area, without requiring special permission or a showing of special circumstances.

Lastly, the Mayor's Office and agencies have identified technical issues regarding the use classifications of buildings subject to the law and the specifications for acceptable storefront display window illumination. The use groups identified in the proposal are limited to buildings that are classified as Business and Mercantile. We believe we should study whether other occupancies should also be included, such as Assembly, which includes theaters and large restaurants. In addition, we should also examine whether the requirements should apply to office or retail spaces that are within buildings of another classification, such as residential. For example, as currently written, a grocery or pharmacy in a ground floor retail space of a residential building would be excluded from the requirements in the current form of the bill. We believe these issues can be adequately addressed to achieve the needed results and limit wasteful light pollution.

Thank you for the opportunity to testify on this important legislation. We share your goals to reduce light pollution and cut down greenhouse gas emissions. We look forward to working with you to do all we can to ensure the legislation takes into account safety, effectiveness, and operational efficiency. I am happy to answer any questions that you may have at this time.

**Testimony before the Committee on Environmental Protection  
of the New York City Council  
By Angela Sung Pinsky  
Senior Vice President, Management Services and Government Affairs  
Real Estate Board of New York  
April 29, 2015**

Good morning Chairperson Richards and members of the Committee on Environmental Protection. The Real Estate Board of New York, representing nearly 17,000 owners, developers, managers, and brokers of real property in New York City, thanks you for the opportunity to testify on Intro 587 and nighttime illumination. We also appreciate that the New York City Council has been proactive in seeking our comments and collaborating with building owners.

As we have learned, buildings account for approximately 72% of the city's greenhouse gas emissions, and lighting represents about 18% of emissions from buildings. Therefore, we know that reducing our carbon emissions to meet the city goal of 80% by the year 2050 largely depends on moving buildings to more efficient lighting, controls, and behavior.

This is why, as an industry, we have been supportive of bold and ambitious city initiatives lead by this committee and the Housing and Buildings Committee through the council, which have been lauded by environmental organizations and cities, both nationally and internationally. These initiatives include the creation and support of Local Law 88 which requires a mandated retrofit of efficient lighting in commercial spaces by 2025. Additionally, REBNY has served on each of the state and city's energy code committees, which – through the requirement of lighting sensors and controls and high minimum standards for lighting – significantly improves the energy efficiency of our new construction and alterations, and reduces lighting when tenants are not present. The US Department of Energy cites that the 2012 ICC Codes will increase building efficiencies by 30% over the 2006 Codes.

Between these two code changes all lighting in large commercial buildings over 50,000 square feet, will have low energy, high efficiency, healthier lighting by no later than 2025– moving the city's buildings from incandescents to florescents to LEDs. Additionally, through the education efforts from the Administration and Council, the Retrofit Accelerator program which will encourage efficient retrofits outlined in the mandated ASHRAE Level II audits, and the support of education organizations such as the Building Energy Exchange (formerly Green Light New York) and Urban Green Council, we believe the industry will become educated on the energy benefits, as well as the economic benefits, of reducing energy loads through efficient lighting. Additionally, we are working with private sector companies that are quickly developing ESCO-like models, that will retrofit lighting at no or low cost to a building owner, with a shared benefit of the energy savings going forward, which we are convinced will spur the lighting changes far in advance of the 2025 goal.

These mandates will create significant savings in energy consumption from lighting and we will continue to support them. However, for the operational reasons listed below, we feel the remaining lighting in commercial buildings may not be reduced significantly further by Intro 587, but may generate substantial regulatory reviews by the city:

- **Building Operations-** because tenant leases include the provision of building services after hours, services such as cleaning and garbage removal often occur during overnight

shifts. Additionally, because leases include 24-hour access for tenants, buildings often maintain a minimum security presence as well as the presence of a Fire Safety Director (FSD), who is required by the City when the building has occupancy of 100 persons above and below grade or 500 persons in the entire building. Because of this, we believe that most large office buildings will have at least one person in the building at all times, and will fall under the Section 4 exemption in the legislation:

4. Where individuals are inside of a building at night, such building's interior or exterior may remain illuminated until such individuals exit such building.

- **Mandated Lighting** – Commercial buildings, by code, are required to have a significant amount of lighting on at all times, which include all stairwells, in elevators and elevator lobbies, major paths of egress, and common areas – falling under section 5:

5. This subdivision shall not prohibit illumination of a building's interior or exterior at night where such illumination is required by law, rule or the New York zoning resolution.

- **Safety and security** - Lighting in our commercial buildings is important for our city's productivity, and for the safety of our tenants, staff and neighbors. A study by the Cambell Collaboration reviewed 13 studies of street lighting interventions in the United Kingdom and United States, spanning four decades, and found that that crime decreased by 21% in areas that experienced street lighting improvements compared to similar areas that did not. For this reason, we believe that most buildings will likely apply to the Department for the waiver in section 3, creating a substantial amount of review for the City.

3. Upon a showing by a building owner that special circumstances indicate a need for night security lighting for such building, the department may waive or vary the provisions of this section for such building to the minimum extent necessary to accommodate such lighting.

- **Landmarking** – Architectural lighting can also be a significant asset to an organization and to the city, creating recognizable icons such as the Empire State Building or the Chrysler Building and Rockefeller Center. Because of the value of highlighting these structures, we believe that most landmarks will also apply for a qualifying exemption, again, creating a significant amount of review for the city.
- **Migrating Birds** – REBNY has in the past partnered with the New York City Audubon's *Lights Out New York* initiative, where we have encouraged our members to turn out lights in buildings during migration season from midnight until dawn. With the significance of the issue, we will continue to remind and educate our members of this important initiative.

While we strongly support the city's goal of lowering our carbon footprint, are concerned with environmental benefits that may create impacts on safety, security, and economic viability. We would like to assist the council in crafting a bill that would further this goal. We appreciate your time and attention to this matter.



**FOOD INDUSTRY ALLIANCE OF NEW YORK STATE, INC.**

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Government Relations (518) 434-8144

**Comments**

**By the Food Industry Alliance of New York State, Inc.**

**in opposition to  
Int. No. 0578-2014**

Thank you for the opportunity to testify at today's public hearing. My name is Jay Peltz and I am the General Counsel and Vice President of Government Relations for the Food Industry Alliance of New York State (FIA). FIA is a nonprofit trade association that promotes the interests statewide of New York's grocery stores, drug stores and convenience stores. Our members include chain and independent food retailers that account for a significant share of New York City's retail food market and the wholesalers that supply them, as well as drug and convenience stores.

Many of our members are small businesses struggling to survive as we muddle through the sixth year of the weakest recovery on record. As a result, weak consumer spending has become the new normal. On top of that, new laws and regulatory changes, no matter how well intended, have imposed significant additional costs on businesses. Given this context, we believe this measure would further hurt our members, especially our small business members that are struggling to survive in a very low margin business being squeezed by nontraditional competitors such as warehouse clubs, dollar stores and internet sellers.

This bill prohibits the nighttime illumination of the exterior or interior of certain buildings, including buildings whose main use is classified in group M under the New York City building code. It is our understanding that supermarket, drug store and convenience store uses fall within the group M classification.

The legislation allows our lights to remain in use until the last person leaves the store. However, at that point, the exterior and interior of the building must go completely dark, unless an exception applies. This mandate can apply even though our stores have thousands, sometimes tens of thousands, of dollars left in them overnight. This can make our stores as inviting a target as banks.

Without an exception, store managers will have to open and close in the dark. Sometimes, those managers will have to walk, in the dark, the entire length of a store to an electric panel in the back to turn the lights on. Similarly, when answering a burglar alarm, police officers would enter a completely dark store.

Darkened parking lots would become hazardous due to potholes, cement blocks, ice and other conditions that are manageable with light but dangerous in the dark. Darkened parking lots can also become hangouts.

In addition, security would be weakened as security cameras would be useless in the dark and police officers would no longer “peek-in” to darkened stores at night.

The security exception in the legislation falls far short of providing our stores, and their workers, with the immediate, comprehensive security protection they need. Under the measure, for the security exception to apply, each building owner would have to separately apply for a waiver based on “special circumstances” indicating a need for night security lighting for such building. The first problem is that operator/tenants cannot force their landlords to put an application in. The second is that decisions will be made case-by case, which inevitably leads to inconsistent outcomes, with some buildings being allowed to leave their lights on to varying degrees, while others won’t be permitted to leave their lights on at all. The third is that we will have to wait for rules to be adopted to define “special circumstances” and other major aspects of the exception while 3 agencies make determinations.

The security of the City’s businesses, and the people who work there, should not be left to the rulemaking process. Accordingly, the bill should be revised to provide that our stores are exempt as a class. The standard should be that lights can be left on to the extent necessary to maximize security.

Finally, since the vast majority of our member stores are part of a “chain of stores” as defined in the measure, the small-store exception would not generally apply.

Accordingly, the FIA, on behalf of its members, opposes adoption of this legislation. Thank you for your time and attention to FIA’s concerns. We are happy to address any questions you may have.

Respectfully submitted,

**Food Industry Alliance of New York State, Inc.**  
**Jay M. Peltz, General Counsel and Vice President of Government Relations**  
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**[jay@fiany.com](mailto:jay@fiany.com)**





**RIVERKEEPER.**  
NY's clean water advocate

Testimony of Deborah Brown, Riverkeeper Chief of Staff

Before the New York City Council Committee on Environmental Protection

At the Public Hearing Re Int. No. 578, April 29, 2015

Councilmember Richards, committee members, Mr. Gewolb and Ms. Swanston, on behalf of Riverkeeper, thank you for inviting us here to give our perspective, which is that it is important to support this excellent proposal. Riverkeeper is dedicated to defending the Hudson River and its watershed and protecting the water supply of nine million New York City and Hudson Valley residents.

Both from that point of view and the local, national and global need to reduce pollution, the effort to reduce energy use through thoughtful limitation of night lighting in non-residential buildings would have important results in a number of ways.

A lot of water is used in generating power. If we shut lights we don't need to have on, power plants can run less, which means we have to cool them less and there is less damage to marine life. That means more and better drinking water, fish to eat, water-based recreation and tourism for us.

Numerous power plants are cooled by "once through" cooling systems that draw billions of gallons of water each day from rivers, lakes, estuaries and coastal waters across the country. These systems draw and chemically treat water, run the water through a system of pipes to absorb waste heat from industrial operations and then discharge the water back into the waterbody. In doing so, they kill or seriously injure aquatic organisms

by crushing larger fish and other animals against the intake screens and pulling eggs, larvae and smaller organisms through the system. On any given day, these cooling systems withdraw in excess of 200 billion gallons of water, or an average of 75 trillion gallons per year, to meet their cooling needs. That is enough water to empty America's thirty largest reservoirs. All of that water is drawn out of waterbodies teeming with life, waterbodies that are home to hundreds of endangered species. This cooling activity adversely impacts the habitat of such federally "endangered" and "threatened" species as sea turtles, salmon, trout, sturgeon, whales and sea lions.

Another point to consider is that less nighttime light is better for marine mammals – they like it to be dark at night. It's actually a really important step to preserving bio diversity (which, for those of us who like to eat and want our children to have enough to eat, is an important thing). The biological activity of much of our fauna is more intense at night than during the day. Having gotten used to it being light during the day and dark at night over millennia, they are genetically hard-wired to be that way, and when it is lighter at night it means they can be more easily seen by predators and therefore have less time to find food, shelter and mates. That obviously affects their health and their survival.

It's hard to remember, when we are in the exciting, built environment of New York City, that we are connected to other environments and that we depend on those environments. If we are serious about sustainability, conserving energy and preserving a reasonable standard of living for ourselves and our marine co-habitants, this bill is a wonderful, progressive way to achieve that.



Report to the Committee on Environmental Protection  
New York City Audubon  
Int. 0578-2014 Limiting Nighttime Illumination for Certain Buildings  
April 29, 2015

Thank you, Council Committee Chair Richards, for inviting NYC Audubon to testify at this important meeting.

My name is Dr. Susan Elbin, and I am an ornithologist and the Director of Conservation and Science for the New York City Audubon Society. NYC Audubon is an independent grass-roots conservation organization, affiliated with the National Audubon Society. We serve and represent 10,000 active members in the City's five boroughs. Our primary mission is to protect wild birds and habitat within the City, improving the quality of life for all New Yorkers. We focus on migratory landbirds (particularly songbirds) and waterbirds. The proposed Int. No. 0578-2014 directly affects migratory landbirds and has the potential to create safer passage for them through New York City.

First, some background:

New York City lies within the Atlantic flyway, an area through which hundreds of millions of birds pass each year during migration. However here, as in other North American urban areas, birds face significant dangers: artificial light and collision with manmade structures. NYC Audubon has estimated that between 90,000 and 243,000 birds die annually just in New York City because of fatal light attraction or collisions with buildings.

Most landbirds migrate at night. They use natural cues from the environment to help them orient and navigate through the dark sky. The clues include: stars, moon, geomagnetism of the earth, and prevailing winds. When nights are foggy, or rainy, and the winds are weak, birds fly at low altitudes and artificial light becomes deadly. Drawn off course by artificial lights, birds can become exhausted by flying around and around lights and buildings like moths near a flame. Sometimes they collide with buildings at night, blinded by weather and light, unable to see glass, and sometimes they land, exhausted, in inappropriate habitat – like the Financial District or Midtown where they face additional risk of colliding with glass in buildings.

Bird migration is a very energy-intensive process. For example, we know that the Blackpoll Warbler (no larger than the size of your fist) can fly approximately 1,800 miles straight over the water twice a year, a nonstop flight of 88 hours. This is like a human running 4-minute miles for

80 consecutive hours. Before migration, a bird will increase its body mass to provide just enough fuel for the flight. When these fat reserves have been used, the bird will start to metabolize muscle....and then, even organs. So as you can see, there really is not much 'room for error' in their flight path and attraction or disorientation by artificial light can really mean the difference between life and death.

A landmark study conducted by the Field Museum in Chicago showed that by turning the lights off in one building, the number of bird kills dropped by an average of 83 percent. Growing awareness of light's fatal attraction to birds has led to action: NYC Audubon inaugurated Lights Out New York in 2005. Over the past ten years, a number of the city's iconic buildings such as the Chrysler Building, Rockefeller Center, 501 Lexington Avenue (formerly known as Citigroup Center), Silverstein Properties, The Time Warner Center and the Worldwide Plaza have turned off their lights overnight during migration to save birds.

Savings in terms of birds' lives are not as easily measured. In New York City, our volunteers patrol the city for dead or injured birds during migration. The monitoring and research improves our understanding of the causes behind urban bird collisions and suggests ways to prevent bird collisions from occurring. Golden-crowned Kinglets, Common Yellowthroats, Ovenbirds, and Woodcock were some of the species often found.

We know that artificial light influences bird behavior during migration in New York City. Every September 11, New York City Audubon monitors the City's Tribute in Light memorial, installed by the Municipal Arts Society. We watch these beams of light all night and often witness thousands of birds circling the lights, "stuck" until the lights are momentarily turned off so they can pass through. Studies have also shown how different colored light beams affect birds differently: blue and green have virtually no effect on direction of migration where white and yellow caused the birds to fly in random directions. Flashing lights affect bird behavior less than steady lights.

On April 27, 2015, Monday of this week, NY Governor Andrew Cuomo, signed into law the Marcellino Bill to curtail light pollution from state buildings. State-owned and managed buildings will now turn off non-essential outdoor lighting from 11 p.m. to dawn during the times of peak bird migration: from April 15 through May 31 and August 15 through November 15. The Governor also launched the new I Love NY Birding website, which will provide visitors with information on bird watching and how to participate in the Lights Out initiative, among other tools. We need the City to follow the State's lead.

Today the Committee on Environmental Protection is considering Int. No. 578, a local law to amend the administrative code of the city of New York, in relation to limiting nighttime illumination for certain buildings. Unshielded lighting causes light trespass, sky glow which obscures night sky views, and road glare. While we are continuing to learning more and more, "fatal light attraction," produced by excessive outdoor lighting is indisputably deadly for migratory birds, causing well over 600 million bird fatalities across the United States every year.

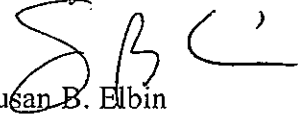
New York City Audubon supports the adoption of Int. No. 578, lights out for energy as a good first step. But we urge the committee to do more and to follow the example set by the Governor. We strongly urge the committee to revisit the list of exceptions to the proposed law.

We urge you to remove the exemption for buildings that are “part of the City’s skyline” and/or “twenty or more stories in height”. These exemptions essentially permit tall buildings to attract and kill birds. These buildings create beacons of light within the urban glow - exactly what distracts birds from their migratory route. We recommend that buildings extinguish unessential or decorative exterior lighting starting at 11 p.m. during bird migration (April-early June; September – early November). Also, in situations where “individuals are inside of a building at night”, we suggest those occupants use task lighting or close the window blinds. Shielded street lights help reduce light pollution.

Without birds, the world would not only lose the beauty of birds but will also lose the important and irreplaceable functions they perform in the ecosystem: pollinators, seed dispersers, decomposers. Birding is also an ever-growing pastime; birders are good for the economy and people come to NYC from all over the world each year to see the birds we have here during migration.

We commend the Environmental Protection Committee in taking a first step to save energy. We ask the Committee to take the next logical step, to expand the breath of the proposed bill to promote dark skies in the overnight hours and to save the country’s irreplaceable migratory birds. We urge the City to adopt Lights Out NY not only for energy savings, but also for the safe passage of migrating birds.

Thank you.

A handwritten signature in black ink, appearing to read 'S B Elbin', with a stylized flourish at the end.

Susan B. Elbin

Director of Conservation and Science

## LISA DICAPRIO, APRIL 29, 2015, TESTIMONY IN SUPPORT OF LOCAL LAW 578

My name is Lisa DiCaprio. I am a professor of Social Sciences at NYU where I teach courses on sustainability. I am here to testify in support of Local Law 578 Limiting Nighttime Illumination for Certain Buildings. The proposed legislation will reduce air and light pollution in NYC.

As a follow-up to this bill, I recommend legislation to mandate the installation of motion sensors in all NYC non-residential buildings and to encourage their installation, as appropriate, in residential buildings.

- With regard to air pollution, buildings in NYC are responsible for about 71% of NYC's greenhouse gas emissions. By reducing these emissions, the legislation will provide a way to meet NYC's new goal of an 80% reduction in emissions by 2050.

Governments can and must assume a leading role in reducing the amount of electricity required for lighting streets and buildings. We can accomplish this goal without jeopardizing public safety by installing new, efficient forms of lighting, implementing smart lighting technologies, such as motion sensors, light timers, and networked street lighting systems; and reducing the overall amount of illumination.<sup>1</sup>

For example, in January 2013, as reported in the New York Times, the Ministry of the Environment in France enacted a decree "to reduce the print of artificial lighting on the nocturnal environment," which is projected to reduce "carbon dioxide emissions by 250,000 tons a year and save the equivalent of the annual consumption of 750,000 households."<sup>2</sup>

In Paris, the implementation of this decree reduced the use of electricity by nine percent. As NYC's average electricity usage is about 12,000 MW, a comparable outcome from the proposed legislation could result in a reduction of 1,080 MW, which is more than the 1,000 MW generated by a nuclear reactor at Indian Point. If the City of Light can dim its lights to protect our environment, why can't we?

- The proposed legislation will also reduce light pollution.

As a result of our modern, industrialized society, we have disrupted all of the key cycles of nature: the carbon cycle, the water cycle, and the soil/nutrient cycle. We have also turned night into day. The sky above most cities in the world is now illuminated to such an extent at night that the stars have all but disappeared.<sup>3</sup>

Of all U.S. regions, the Northeast contributes the most to light pollution.<sup>4</sup> In NYC, we have a special responsibility to turn out unnecessary lighting.

In an article entitled, "Light Pollution: Our Vanishing Night," Verlyn Klinkenborg described the adverse impact of light pollution on animal species and humans:

"We've lit up the night as if it were an unoccupied country, when nothing could be further from the truth. Among mammals alone, the number of nocturnal species is astonishing. Light is a powerful biological force, and on many species it acts as a magnet...Migrating at night, birds are apt to collide with brightly lit tall buildings; immature birds on their first journey suffer disproportionately....In the end, humans are no less trapped by light pollution than the frogs in a pond near a brightly lit highway. Living in a glare of our own making, we have cut ourselves off from our evolutionary and cultural patrimony—the light of the stars and the rhythms of day and night. In a very real sense, light pollution causes us to lose sight of our true place in the universe, to forget the scale of our being, which is best measured against the dimensions of a deep night with the Milky Way—the edge of our galaxy—arching overhead."<sup>5</sup>

By supporting the proposed legislation we will be able to restore, at least in part, the natural cycle of darkness in NYC that is required to save life on our planet.

#### NOTES:

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<sup>1</sup> Diane Cardwell, "Copenhagen Lighting the Way to Greener, More Efficient Cities," New York Times, December 9, 2014, <http://www.nytimes.com/2014/12/09/business/energy-environment/copenhagen-lighting-the-way-to-greener-more-efficient-cities.html>

<sup>2</sup> Maia de la Baume, "France Will Dim Its Lights to Conserve Energy," New York Times, January 30, 2013, <http://www.nytimes.com/2013/01/31/world/europe/paris-lights-to-be-dimmed-to-save-energy.html>

<sup>3</sup> For a global map of light pollution, see:  
<http://www.lightpollutionmap.info/#zoom=4&lat=5759860&lon=1619364&layers=B0TFFFFT>

<sup>4</sup> See: <http://astro-observer.com/dark/lpmapusa.html>

<sup>5</sup> See: <http://ngm.nationalgeographic.com/2008/11/light-pollution/klinkenborg-text/1>

New York City Council  
Environmental Committee Hearing  
April 29, 2015  
Resolution Int.0578-2014  
Lights Out Bill

It is imperative that we institute immediately as many compounding measures as possible to reduce our carbon footprint.

As far back as December 22, 2011 I sent a list of aggressive suggestions to David Bragdon in regard to Plan NYC that included practical energy savings and carbon footprint reduction paths for NYC. These recommendations have been presented to the City Council as well and are reiterated on the testimony given on October 23, 2014 before the Environmental Committee as well as previous City Council hearings.

Conservation, incentives for conservation, as well as deadlines and fines must be implemented to assure the path to the city's goal is met with certainty.

Many of these recommendations create jobs, have minimal or no costs and can be implemented immediately.

This Lights Out Bill is a fine first step to reaching our goals. A copy of one of the hearing's recommendations are included here.

Mav Moorhead

NYH20

DCS

917.923.2118

\* Motion sensors on all hall lighting  
Should be included to further augment  
the reach of this bill.



**New York City Council**

**Donovan Richards-Chair Environmental Committee**

Hearing – October 23, 2014

Int. 378 Amendment Administration Code

Presented by Mav Moorhead, NYH2O, 917.923.2118

**PRACTICAL CONSERVATION SOLUTIONS**  
**MANDATES TO AID IN REDUCING GREENHOUSE GAS**  
**TO IMPLEMENT NOW**

Natural gas usage plainly allows for abundant fugitive methane leakage in New York City creating high levels of greenhouse gas contributing to climate change inhibiting efforts to reach expected goals for a reduction of greenhouse gas.

Marcellus Shale's high levels of Radon 222 are being transported into NYC homes, restaurants, commercial entities allowing a serious lung cancer threat into our kitchens, boiler rooms and appliances to millions of New Yorkers.

It is imperative that we not only mitigate the onslaught of resultant greenhouse gas factors from fossil fuels that its carbon footprint has produced but most certainly to institute immediately as many compounding measures as possible to stabilize, if not reverse, this crippling prospect of a resultant future climate change and accelerated levels of cancer.

**A few suggestions include:**

- Conservation-Instituting mandates for NYC buildings to provide uniform heat throughout buildings thru use of conforming valves to no higher temperature of 72 degrees relieving our existing gross overheating that exists in so many NYC residential and commercial buildings.
- Install electric trees in city owned locations to facilitate elect car charging.
- Promotion and subsidies for solar panels on roofs would substantially augment energy supply. All NYC owned property should be solar powered. Gas usage would dramatically decrease.

*over →*

- ★ • **Community Choice Aggregation model should be explored for NYC.**
- ★ • **Institute a mandate whereby office buildings turn off lights after a certain hour unless in direct use eliminating obvious energy waste.**
- ★ • **As part of the European policy that currently exists, 24 hour hall lighting minimized. Motion sensors implemented for efficiency and energy conservation to control hall lights when not in use eliminating waste.**
- **Mandate building retrofit upgrades to include upgrading insulation, increasing air barrier resulting in minimizing fossil fuel energy usage with the addition of implementing solar panels on roofs of every building.**
- **Con Ed work force must be retrained in renewals installation & mtc.**
- ★ • **Direct building owners thru a mailing campaign with definitive steps to be taken regarding real conservation efforts. This could be accomplished with a menu of choices that would be phased in within a certain time frame. For example, a list of 10 choices on a Conservation Checklist of at least 3 of the choices by each landlord to be implemented within 1 year and progressing on to accomplish additional choices each year. Provide owners with a step-by-step roadmap of options to convert to renewable.**
- ★ • **A landlord reward system for accomplishing their conservation goals could be achieved with a corresponding percentage reduction of Real Estate Taxes for every choice on the Conservation Menu Checklist (not to mention a built in reduction of yearly NOI expenses), always a tried and true incentive. Fines for non-compliance.**

**Deliberate measures to reverse usage of natural gas and other fossil fuels must be a central focus of PlaNYC, not simply mitigating the results of their usage. Energy usage must be decreased by a considerable sum and these measures, many of which have minimal costs, can be implemented immediately.**

**Mav Moorhead**



**917.923.2118**

New York City Council  
Environmental Protection Committee

Hearing of April 29, 2015  
Int. 578, "Lights Out"

Testimony in support by Gail Clyma

First, I would like to thank Council Member Richards and members of this Environmental Protection Committee for introducing and hearing this important legislation.

Although New York aspires to be a sustainable city, it has done nothing to date to curtail light pollution. "Light pollution" can be defined as "Any adverse effect of artificial night light, including glare, light trespass, sky glow, energy waste, compromised safety and security, and impacts on the environment and on human health."

Electric lighting has only been in existence for about 120 years, and for most of that time it's been assumed to be totally benign. In recent decades, however, a great deal of evidence has accumulated showing that exposure to light at night is harmful to the environment and disrupts circadian rhythms of animals and people...sometimes with disastrous results. This should not surprise us, since all earth's creatures evolved over many thousands of years by adapting to a world that was bright in the daytime and truly dark at night.

I have prepared an overview of the human health issues associated with artificial night light. I'd like to read a few paragraphs from this and will leave you copies for further information.

*When Peter Jennings reported on "World News Tonight" in 2003 that nighttime lighting might be harmful to human health, it was surely news to almost all his listeners. But the possibility of a link between light and breast cancer had been noted as early as 1990.*

*An analysis of more than 10,000 breast cancer patients done that year showed that profoundly blind women were only half as likely to develop the disease as sighted women. Subsequent research in Sweden and Norway indicated that cancer incidence for people who were visually impaired but able to detect light was virtually identical to the general population, whereas people unable to detect light had only 70% of that cancer risk. Among profoundly blind men there was lower incidence of cancers of the prostate, stomach, colon, rectum, skin, and lung; among women, fewer cancers developed in the breast, ovaries, and stomach.*

*The apparent role of light in development of such cancers pointed to the hormone melatonin, which is produced by the pineal gland in response to the body's circadian rhythm, or biological clock. It is present even in algae and has existed in plants and animals for over three billion years. Light-dark cycles cause melatonin levels to rise at night in darkness and fall during daylight, but exposure to artificial light at night can suppress melatonin production—except in the profoundly blind.*

In addition:

*At its 2009 Annual Meeting the American Medical Association adopted a resolution that, in part, commits the Association "to support light pollution reduction efforts and glare reduction efforts at both the national and state levels." And in 2012 AMA released a report on "Light Pollution: Adverse Health Effects of Nighttime Lighting." Among its conclusions: "Even low intensity nighttime light has the capability of suppressing melatonin release."*

The adverse impacts of artificial night light on the environment are many and varied, even though research into this phenomenon is really still in its infancy. Here are just five examples.

1. Salmon populations in a Washington river were decimated when new lights along the river trail caused babies to become visible to predators when they fed at night in shallow waters that had been dark.
2. Populations of fireflies are dwindling because their mating signals cannot be seen well in the absence of real darkness.
3. Sea turtle populations have suffered worldwide declines because lighting along beaches disorients hatchlings who, instead of heading into the ocean as they normally would, often become dehydrated or crawl into roadways and die.
4. Although the concentration of insects noticeable around outdoor light fixtures provides a ready food supply for some species of bats, they are themselves at the same time more visible to predators.
5. Light pollution striking the surface of lakes has been found to reduce movement of a species of plankton. As a result, increased amounts of surface algae left unconsumed by the zooplankton could potentially lead to algal blooms and poor water quality.

It's important to note that light pollution's adverse effects are by no means confined to tropical beaches or rural fields. Millions of birds die every year when they become disoriented and crash into lighted skyscrapers. During migration they navigate in part by the stars, which can't be seen in the bright glow of unnecessary light above New York and other cities.

And these impacts are not just local. Urban sky glow also obscures a recently discovered "celestial compass" that serves as an important navigational signal for some nocturnal animals. This depolarizing effect has been described as "a form of pollution with global reach."

These are just a few examples of what has been learned so far, and I'll leave you a little additional information on the subject. But you can be sure there is much more harm being done that simply hasn't been documented yet.

Light pollution is sometimes also defined as lighting that is excessive, misdirected, or unnecessary. This wonderful bill you are considering addresses that wasted light that is not on for any good reason. Of course it will save energy and help reduce our city's carbon footprint. But in contrast to some energy savers like the City's horrid new too-blue LED streetlights, this bill will also help to *reduce* light pollution's harmful impacts on the environment and human health.

I call that a win-win proposition!

Please bring this bill forward and encourage all your Council colleagues to support it!

## Artificial Night Lighting and Human Health: Cause for Concern

When Peter Jennings reported on "World News Tonight" in 2003 that nighttime lighting might be harmful to human health, it was surely news to almost all his listeners. But the possibility of a link between light and breast cancer had been noted as early as 1990.

An analysis of more than 10,000 breast cancer patients done that year showed that profoundly blind women were only half as likely to develop the disease as sighted women. Subsequent research in Sweden and Norway indicated that cancer incidence for people who were visually impaired but able to detect light was virtually identical to the general population, whereas people unable to detect light had only 70% of that cancer risk. Among profoundly blind men there was lower incidence of cancers of the prostate, stomach, colon, rectum, skin, and lung; among women, fewer cancers developed in the breast, ovaries, and stomach.<sup>1</sup>

The apparent role of light in development of such cancers pointed to the hormone melatonin, which is produced by the pineal gland in response to the body's circadian rhythm, or biological clock. It is present even in algae and has existed in plants and animals for over three billion years. Light-dark cycles cause melatonin levels to rise at night in darkness and fall during daylight, but exposure to artificial light at night can suppress melatonin production--except in the profoundly blind.

Melatonin has anti-oxidant properties that may even slow the aging process. It induces sleep, boosts the immune system, lowers cholesterol, protects the body's cardiovascular system, and indirectly regulates the pituitary hormones that control endocrine glands such as the thyroid, pancreas, ovaries, testes, and adrenals. Researchers believe that lowered melatonin levels permit increased uptake of linoleic acid by cancer cells, which enhances their growth. In 2002 an important piece in the light-health puzzle dropped into place with the discovery of previously unknown neural receptors in the eye. These "retinal ganglion cells," which are separate and independent from the rods and cones that provide vision, trigger the circadian clock that controls melatonin production.

Important retrospective epidemiologic studies reported in the Journal of the National Cancer Institute and elsewhere examined breast cancer incidence among more than 78,000 women participating in the long-term Harvard Nurses' Health Study. Nurses who worked at least three nights per month for 30 years or more had a 36% higher breast cancer risk.<sup>2</sup> A separate analysis of the same 78,000 women indicated a 35% increase in risk of colorectal cancers among nurses who worked rotating night shifts for 15 years or longer.<sup>3</sup> A smaller survey of women's sleep habits and bedroom lighting environment showed that graveyard shiftwork was associated with 60% higher incidence of breast cancer; there was also an indication of increased risk among subjects with the brightest bedrooms.<sup>4</sup>

The search for understanding of the light-cancer connection has been pursued in the laboratory as well as in large-scale analyses of medical records. An important insight came from Dr. David Blask at the Bassett Research Institute, where lab animals were implanted with cancer cells and divided into two groups--one exposed to light around the clock and the other kept in total darkness at night. Inadvertently, however, some animals from the latter group were exposed to a very small amount of light coming under the door at night. Tumors in these animals grew almost twice as fast as tumors in animals getting a night of total darkness; in fact, that bit of light at night produced a tumor growth rate virtually identical to that in animals exposed to bright, round-the-clock light.<sup>5</sup> A subsequent Blask study reported in 2005 showed that blood from women exposed to bright nighttime light stimulated growth of human breast tumors that had been implanted in laboratory rats.<sup>6</sup>

Two innovative studies used satellite images to classify geographic areas by the amount of outdoor light visible in each from space. The first such investigation, conducted in Israel, found that incidence of breast cancer among women living in areas of the country with the brightest nighttime lighting was 73% higher than in areas with the lowest lighting.<sup>7</sup> A similar

study, which covered 164 countries, found that prostate cancer incidence in the most brightly lit countries was more than double the rate in the countries with the lowest nighttime light emissions.<sup>8</sup>

While correlations between cancer incidence and exposure to light at night may not prove a causal connection, the complementary laboratory work reinforces the evidence that it is only prudent to prevent even small amounts of outdoor lighting from entering bedroom windows.

At its 2009 Annual Meeting the American Medical Association adopted a resolution that, in part, commits the Association "to support light pollution reduction efforts and glare reduction efforts at both the national and state levels." And in 2012 AMA released a report on "Light Pollution: Adverse Health Effects of Nighttime Lighting." Among its conclusions: "Even low intensity nighttime light has the capability of suppressing melatonin release."

1. Feychting M, Osterlund B, Ahlbom A  
*Reduced cancer incidence among the blind.*  
Epidemiology Sep 1998, 9(5):490-4.
2. Schernhammer ES, Laden F, Speizer FE, Willett WC, Hunter DJ, Kawachi I, et al.  
*Rotating night shifts and risk of breast cancer in women participating in the Nurses' Health Study.*  
Journal of the National Cancer Institute 2001, 93:1563-8.
3. Schernhammer ES, Laden F, Speizer FE, Willett WC, Hunter DJ, Kawachi I, et al.  
*Night-shift work and risk of colorectal cancer in the Nurses' Health Study.*  
Journal of the National Cancer Institute 2003, 95: 825-828.
4. Davis S, Mirick DK, Stevens RG  
*Night-shift work, light at night, and risk of breast cancer.*  
Journal of the National Cancer Institute 2001, 93:1557-62.
5. Dauchy RT, Blask DE, et al.  
*Light contamination during the dark phase in photoperiodically controlled animal rooms: Effect on tumor growth and metabolism in rats.*  
Laboratory Animal Science Oct 1997, 47:511.
6. Blask DE, Brainard GC, et al.  
*Melatonin-depleted blood from premenopausal women exposed to light at night stimulates growth of human breast cancer xenografts in nude rats.*  
Cancer Research 2005, 65:11174-11184.
7. Kloog I, Haim A, Stevens RG, Barchana M, Portnov BA  
*Light at Night Co-distributes with Incident Breast but not Lung Cancer in the Female Population of Israel.*  
Chronobiology International 2008, 25(1):65-81.
8. Kloog I, Haim A, Stevens RG, Portnov BA  
*Global Co-Distribution of Light at Night (LAN) and Cancers of Prostate, Colon, and Lung in Men*  
Chronobiology International 2009, 26(1):108-125

For a more detailed discussion of the issues, including an extensive bibliography, see also:

Pauley SM  
*Lighting for the human circadian clock: Recent research indicates that lighting has become a public health issue.*  
Medical Hypotheses 2004, 63:588-596.

Some documents concerning

## Ecological Impacts of Light Pollution

"Celestial Compass Obscured by Urban Light Pollution for Some Nocturnal Animals,"  
*ScienceDaily*, October 27, 2011.

<http://www.sciencedaily.com/releases/2011/10/111027112513.htm>

"Urban light pollution has been shown to reduce the visibility of not only the stars, but also of an important navigational signal for some nocturnal animals. During clear moonlit nights, a compass-like pattern of polarized light that is invisible to the human eye stretches across the sky....The report...cautions that screening of the celestial compass may reduce the evolutionary fitness of certain nocturnal animals...possibly leading to disruption of food webs and affecting entire ecosystems....'What our study shows is that the depolarizing effect of skyglow is a form of pollution with global reach.'....Much or most of the skyglow propagating large distances from the city is caused by lights that aren't pointed at the ground."

"Bats and Light Pollution," published online, 2010.

<http://www.centroregionalechiroterteri.org/download/eurobats/Bats%20and%20light%20pollution.pdf>

"Throughout evolution living organisms have adapted to the natural variations in available light. In the last 150-200 years, however, artificial light has profoundly changed nighttime light conditions....Bats are particularly exposed to light pollution due to their nocturnal habits. They have a high conservation interest (many species are threatened) and an important ecological role (being the principal predators of nighttime insects)."

"Impacts of Light Pollution on Organisms and Ecosystems," Chapter 4 of *Artificial Light in the Environment*, Royal Commission on Environmental Pollution, November 27, 2009.

[www.official-documents.gov.uk/document/other/9780108508547/9780108508547.pdf](http://www.official-documents.gov.uk/document/other/9780108508547/9780108508547.pdf)

"Globally, cumulative natural...and anthropogenic...changes are having profound, long-term effects on the Earth's ecosystems....The proliferation of artificial light throughout the biosphere could act in synergistic and unknown ways with these other large-scale environmental changes."

"Lights Out? Experts Fear Fireflies Are Dwindling," *USA Today*, August 30, 2008.

[http://www.usatoday.com/news/world/2008-08-30-1331112362\\_x.htm](http://www.usatoday.com/news/world/2008-08-30-1331112362_x.htm)

"Lynn Faust spent a decade researching fireflies on her 40-acre farm in Knoxville, Tenn., but gave up on one species because she stopped seeing them. 'I know of populations that have disappeared on my farm because of development and light pollution,' said Faust. 'It's these McMansions with their floodlights. One house has 32 lights. Why do you need so many lights?'"

"Bright Nights Dim Survival Chances," *AAAS Science Now*, February 22, 2007.

<http://news.sciencemag.org/sciencenow/2007/02/22-02.html?ref=hp>

"All animals--from one-celled critters to humans--produce melatonin, a hormone that regulates cell metabolism, protects against the formation of cancerous tumors in larger animals, and allows many mammals and humans to enjoy restful sleep. But the hormone accumulates most efficiently in recurring or total darkness, such as in regular day-night cycles. When those cycles are disrupted, so is melatonin production. On the behavioral side, even seeing artificial illumination--such as street lights or indoor lamps shining through windows--at night can throw off foraging and migration in many species."

"Ecological Light Pollution," *Frontiers in Ecology and the Environment*, May 2004.

<http://urbanwildlands.org/Resources/LongcoreRich2004.pdf>

Excellent review of the issues by organizers of the 2002 conference (see below).

(over)

"Degraded Darkness," *In Practice: A Publication of the Society for Conservation Biology*, Spring 2004.

(No longer freely available online.)

"Many of the effects of artificial light may resonate up and down food chains, dragging whole ecosystems into imbalance. And by modifying the playing field on which nocturnal organisms develop, interact, and reproduce, artificial light may sculpt not only their individual lives but also the biological evolution of their species."

"Turn Down the Lights," *Discover*, July 2003.

Subtitled "The party's over: When we turn up the lights, nature goes a little haywire."

(No longer available online.)

"On a clear, dark night far from light-polluted skies, roughly 2,500 celestial points of light can be discerned by the naked eye. For people living in the suburbs of New York, that number dwindles to 250; residents of Manhattan are lucky to see 15. Moreover, as the stars fade from view, a growing body of research suggests that excessive exposure to artificial night light can alter basic biological rhythms in animals, change predator-prey relationships, and even trigger deadly hormonal imbalances in humans."

"Light Pollution Taking Toll on Wildlife, Eco-Groups Say," *National Geographic Today*, April 17, 2003.

[http://news.nationalgeographic.com/news/2003/04/0417\\_030417\\_tvlightpollution.html](http://news.nationalgeographic.com/news/2003/04/0417_030417_tvlightpollution.html)

"Designating a dark sky as a natural resource which is as worthy of protection as an old growth forest or a scenic river may seem odd, but biologists worry about the ultimate impact caused by this little-understood ecological disturbance."

"Understanding, Assessing, and Resolving Light-Pollution Problems on Sea Turtle Nesting Beaches," Florida Marine Research Institute, Third Edition, 2003. With Executive Summary.

[http://research.myfwc.com/engine/download\\_redirection\\_process.asp?file=tr2\\_0814.pdf&objid=39080&dltype=publication](http://research.myfwc.com/engine/download_redirection_process.asp?file=tr2_0814.pdf&objid=39080&dltype=publication)

"Sea turtle populations have suffered worldwide declines, and their recovery largely depends upon our managing the effects of expanding human populations....Of the many ecological disturbances caused by human beings, light pollution may be among the most manageable."

"Turn Off the Lights!," *California Wild: The Magazine of the California Academy of Sciences*, Fall 2002.

<http://researcharchive.calacademy.org/calwild/2002fall/stories/horizons.html>

"Bulb by bulb, the invention made famous by Thomas Edison has come to usurp the moon and Milky Way as evening beacons. There is mounting evidence that the disappearance of darkness has far-ranging effects on birds and bats, frogs and fireflies, fish and zooplankton. And while research into the ecological effects of night lighting remains in its infancy, the accumulated evidence so far shows how deeply the constant aura surrounding human habitations affects night creatures."

"Ecological Consequences of Artificial Night Lighting" (ECANL)

Conference co-sponsored by UCLA and the Urban Wildlands Group, February 23-24, 2002.

[www.urbanwildlands.org/conference.html](http://www.urbanwildlands.org/conference.html)

- Companion bibliography (annotated), 20 pages
- Abstracts issued in advance of conference
- Follow-up book with the same title, published in 2005, available for purchase at Amazon.

"Adirondack Council Statement on Light Pollution," January 29, 2002.

A rare moth, *Lithophane lepida lepida*, is so susceptible to artificial light that it vanished from the Albany Pine Bush and was subsequently threatened by development in its only remaining New York State habitat, the Clintonville Pine Barrens.



"City Lights, a Siren's Song for Birds, Are Dimmed," *New York Times*, May 16, 2001.  
[www.nytimes.com/2001/05/16/us/city-lights-a-siren-s-song-for-birds-are-dimmed.html](http://www.nytimes.com/2001/05/16/us/city-lights-a-siren-s-song-for-birds-are-dimmed.html)  
Illuminated buildings confuse migrating birds accustomed to navigating by the stars. Some smash into windows, and others drop from exhaustion after hovering moth-like around the lights. With estimated deaths at more than 100 million a year, major skyscrapers in Chicago and New York have begun dimming their lights.

"Science Observer: Night Lights," *American Scientist*, January-February 2001.  
<http://www.americanscientist.org/issues/pub/night-lights>  
Light pollution striking the surface of lakes is found to reduce movement of a species of plankton. "As a result, increased amounts of surface algae left unconsumed by the zooplankton could potentially lead to algal blooms and poor water quality."

"Signals Maintenance Shapes Salmon Solution," *Northwest Region Bulletin*, Washington State Department of Transportation, March 23, 2001.  
Declining numbers of sockeye salmon in Washington's Cedar River were found to be a result of lighting above the Cedar River Trail. Deprived of darkness, the salmon "fry" were easy for predators to spot. Salmon populations rebounded after the Department of Transportation fashioned black rubber shields for the trail lights.

"The Dark Side of Light," *Audubon*, March-April 2000.  
<http://magazine.audubon.org/darksideoflight.html>  
"Light pollution is a growing threat to our birds and wildlife. Worse, it may even increase cancer rates in humans."

"Security Lighting and Its Impact on the Landscape," *Journal of Arboriculture*, October 1975.  
<http://joa.isa-arbor.com/request.asp?journalID=1&ArticleID=1348&Type=2>  
High-pressure sodium was "the new light source" when this was written, with intensity two to four times higher than older street lighting systems, and the Department of Agriculture was receiving many questions from florists and nurserymen. Among the answers:

"Light throughout the 24-hour day inhibits flowering and promotes vegetative growth of short-day plants, encourages continued vegetative growth and early flowering of long-day plants, and increases stem lengths of day-neutral plants."

"Into the fall season young plane trees (sycamores) in the nursery grew more rapidly and much later than plants of similar age that had been screened from the night lighting. Winter dieback was severe on the lighted trees during the following spring."

"Continuous lighting depresses the formation and maintenance of chlorophyll in leaves and promotes lengthening of the internodes of the branches and expansion of the leaf area. All of these changes increase the likelihood that the leaves will be more sensitive to air pollution during the growing season."

*The foregoing is just a small sampling of the research on this subject. For a listing of some 400 studies (most with abstracts), see <http://www.trianglealumni.org/mcrol/LAN-Environmental-References.pdf>*

April 29, 2015

Chairman Donovan Richards  
New York City Council Environmental Protection Committee

Dear Chairman Richards:

My name is Ling Tsou. Thank you for the opportunity to testify today at the hearing of Int 578.

Our country leads the world in wasting energy. The United States has an energy efficiency of 42 percent, which means 58 percent of all the energy we produce is wasted. Every industry including manufacturing, transportation, residential, commercial has contributed to the wastefulness of this country. We should not be proud of the fact that U.S. is the least energy efficient country in the world. We should do something about it. If each of us is able to make at least one change in our daily lives the energy saving can really add up. We all know the sensible thing to do is to turn off lights when we leave a room. Yet, I see many office or commercial buildings in the city lit up like day time in the night after everyone has gone home. I often wondered why the building management wouldn't simply turn off the lights at night and save energy. Now the lights will be turned off if this bill passes.

Even though renewable energy is growing rapidly, the bulk of our power is still produced from fossil fuels which lead to harmful greenhouse gas emissions. The city has passed a bill mandating greenhouse gas reduction of 80 percent by 2050. Passing this bill will go a long way towards helping the city to achieve this goal since 37 percent of the city's greenhouse gas emissions come from commercial, industrial or institutional buildings. As of July, 2013 Paris, the "City of Light", began turning off its lights at night. In addition to saving more than \$260 million dollars annually, the city of Paris expected to cut 250,000 tons of carbon dioxide each year. Paris is about a fourth the size of New York City. If this bill passes the monetary and greenhouse gas emission savings in New York City would be proportionately greater.

Paragraph 4 in this bill states that if there are individuals inside a building at night, then lights stay on until these individuals leave. It would appear to be such a waste of energy if lights in the entire multi floor building remain if there is just a few individuals still working in certain parts of the building. We recommend the bill be amended to require the installation of occupancy or motion sensors such that lights will be turned off 30 minutes or one hour after there is no motion in a defined area. The energy savings would be so much greater than the cost of installing these motion sensors.

Climate change is a reality. This is the greatest threat to human civilization and existence as we know it. If we continue to live and do things as we have always done, our way of life is surely not sustainable. Empire State building is not about to go dark. Nor will the iconic landmark skyscrapers that define New York City skyline or lights for security. The wasteful and unnecessary lights in the buildings in the city will be dimmed. This is the least we can do. This bill helps us take a step in the direction to reduce greenhouse gas emission, air pollution, and light pollution in the city. Energy conservation is one of the best ways to combat climate change.

Thank you.

Sincerely,

Ling Tsou  
United for Action  
New York City

**New York City Council Hearing - Int 0578-2014 - 4/29/15, 1:00**  
**“Limiting Nighttime Illumination for Certain Buildings”**  
**Testimony of Catherine Skopic**

Thank you Legislative Counsel, Samara Swanston, Chair, Donovan Richards, Council Members Chin, Constantinides, Gibson, Levine, Mendez, Johnson, Rodriquez, Rose, Van Bramer, Williams and all others who have signed this legislation to limit nighttime illumination for certain buildings.

My name is Catherine Skopic, and I am a member of the People’s Climate Movement.

The night skyline of New York City - there’s nothing else like it. Many of us have felt a sense of pride in its beauty. However, now that we are in this climate crisis, we see these lights as something else - we see them as wasteful of energy. Keep them on where needed - turn them off where not - logical and smart - what this bill is about and why I and the thousands of people I represent applaud the New York City Council for having introduced this legislation..

In case we didn’t know before, the recent IPCC report has made the seriousness and urgency of our climate crisis clear without a doubt.- we must reduce carbon. Conservation is the easiest, least costly path to reducing green house gases; and reducing nighttime illumination in certain buildings helps get us closer to our goal of 80% reduction by 2050.

A group of us recently took a tour of the new NYISO facility outside Albany - that’s the New York Independent Service Operator - the not-for-profit corporation that is responsible for operating the state’s bulk electricity grid. It was explained to us how NYS could be compared to an hour glass - the upper portion being northern NYS where most of our electricity is produced. Then there is the bottle-neck leading to the lower portion, New York City and Long Island. We have the energy upstate, but it’s tough to get it through that narrow gateway to NYC where needed - why our electricity is so expensive, why we have to start generating our own electricity renewably, introduce CCA’s - Community Choice Aggregates - and why this bill for conservation of our energy is so essential. What energy we DO have and can use sustainably needs to be spent wisely, going to schools, hospitals, libraries and such and not be foolishly wasted..

Indian Point is the only nuclear power plant in the country with a reactor operating without a license - and since 2013. Its other reactor expires this December. We have renewables to replace IP. Also, by simply turning off lights where not needed, we could save the approximately 6% energy we get from Indian Point at peak. How glorious would that be to not only save energy but also to at last comfortably close Indian Point!

In closing, I have a button I made for you that reads: “CONSERVE! Limit Nighttime Lighting.” and I hope and pray we do!

Respectfully and in PEACE, Catherine Skopic



# sane energy project

City Council Hearing

April 29, 2015

Regarding: Int. No. 578

*A Local Law to amend the administrative code of the city of New York,  
in relation to limiting nighttime illumination for certain buildings.*

Chair Richards, Council Members, thank you for the opportunity to offer comment today.

**Sane Energy Project wholeheartedly supports bill 578, the “Lights Out” bill.**

We applaud the Council's efforts to eliminate wasteful energy use as well as light pollution, as this will result in lowering both our carbon footprint as well as bird strikes, and could even result in New Yorkers getting a better night's sleep.

The building types the law applies to are:

- (Group B) Businesses such as banks, insurance agencies, government buildings, police and fire stations, and doctor's offices; and
- (Group M) Mercantile, such as grocery stores, department stores, and gas stations.

## **Energy savings:**

Elsewhere in the developed world, even in cities, less nighttime illumination is standard. The use of efficient lamping such as LEDs and fluorescents, as well as motion detectors, inside and outside buildings, is ubiquitous. New York *must* move in this direction, however, we must balance the need for safety and security, as well as the benefit of tourist dollars, with the need for energy savings. Americans will need some time to adjust to new levels of nighttime lighting, and New Yorkers who lived through the crime-ridden '70s and '80s may understandably need reassurance of their safety.

The Council has therefore included some common sense exceptions to the rule, for instance accounting for 24-hour groceries and gas stations, and to maintain the tradition of holiday window displays.

We will comment on three of the exemptions:

## Section 2:

Landmarked buildings may be exempted by applying to LPC for a waiver.

As architecture geeks, we wholeheartedly support this exemption, however, even iconic landmark buildings could be shut off after midnight. Some of us are old enough to remember when midnight was gaged by the Empire State Building going dark, keeping only the top of its radio tower lit. Saturday Night Live's original opening sequence even celebrated that shut off time. We can revive that tradition.

We urge the Council to consider this addition to the rule before the Freedom Tower opens. The Top of the Rock observatory already closes at midnight. The Empire State building observatory remains open until 2am. However, if the city's landmarks were to go dark at midnight, the observatory would necessarily follow suit. A creative solution could be worked out with the Empire State Building, to be phased out over time, such as a credit to make up for any lost revenues between the hours of midnight and 2am.

Section 3:

Building owners may apply for an exemption for security lighting, to be coordinated with police.

We agree that security must be a top concern. We hope that businesses that are exempted will be directed to use motion detector lighting, and that constant or overly-bright flood lighting will be prohibited.

We also suggest that this prohibition be extended to stadiums and sports facilities, which often use extremely bright and tall floodlights. The Columbia track and football fields at 218th Street in Manhattan are one such literally glaring example: their flood lights remain on full blast, many late nights, while the fields are often used by only one or two maintenance workers.

Section 4:

While people remain inside, interior and exteriors may remain illuminated.

Smart security measures for office workers and business owners who work late are a must, however, especially in large office buildings with security personnel, the use of graphic eye systems, sunset-sensing lighting, motion detectors etc., can automatically respond to changing seasonal daylight, and greatly reduce energy waste. Only floors where people are working should be allowed to remain lighted, all others should go dark. Most forward-thinking businesses have already implemented such measures as a cost savings to themselves; these systems should be mandated for larger businesses who can afford them.

**Bird Strikes:**

In August of 2012, NPR reported:

“Modern architecture loves glass. But biologists say, as more glass buildings go up, more birds are dying.” That's a problem, because birds are seed dispersers; and they eat tons of insects. So every bird that's killed is an ecological benefit lost.

The American Bird Conservancy publishes an excellent guide to bird-friendly building design, and they note:

Collision with glass is the single biggest known killer of birds in the United States, claiming hundreds of millions or more lives each year. The problem of bird collisions with glass is greatly exacerbated by artificial light. Light escaping from building interiors or windows that are made reflective by exterior light can attract birds, particularly during migration, or on foggy nights, or when the cloud base is low. Strong beams of light can cause birds to circle in confusion and collide with structures, each other, or even the ground. Others may simply land in lighted areas and must then navigate an urban environment rife with other dangers, including more glass. Glass curtain walls with tree-filled atriums inside are the most dangerous.

**In Conclusion:**

While preventing bird strikes is important, and this bill will help that, the real threat to birds, and species of all kinds, including humans, is climate change. Reducing wasted energy that causes global warming is the real benefit of the "Lights Out" bill. Thank you for sponsoring this bill. We strongly urge ALL members of the Council to vote yes and pass it unanimously.

Thank you.

## NO UNNECESSARY LIGHTS

I support INT Resolution 578 to turn off unnecessary lights on buildings in NYC.  
These

lights require the burning of fossil fuel and contribute to the crisis of global warming and climate

instability. The burning of fossil fuel also causes an increase in pollution and the health consequences of pollution. Lights out programs have been successfully implemented in *Toronto* Canada and Chicago.

The New York City Audubon Society also supports this program. Miigratory birds are attracted to the lights <sup>with</sup> and fatal consequences. They hit the windows and usually die or are

seriously injured. I worked with New York City Audubon one season and picked up many of

the injured birds. Very few were saved. The first bird I found was a deceased

American Woodcock. These birds eat the insects that damage farmers crops. The raptors eat

the rodents that also cause damage. Many of the species pollinate the food we eat and help

disperse the seeds. They a have a right to live without the services they provide free of charge.

There is no reason not to support this program, and besides it saves the businesses money on their

electric bills.

Thank you, Anne Lazarus, 524 East 20th St. New York, N.Y. 10009  
212-673-9059, amlazarus47@gmail.com

*If one person is in the building at night, just have a small lamp light. No exception 4*

Thank you for holding this hearing and for the opportunity to speak on bill number 578, to reduce nighttime illumination in NYC

My name is Ken Gale and I am the Founder of the New York City Safe Energy Coalition and the host and producer of the environmental radio show Eco-Logic on WBAI-FM here in New York City.

When the City Council passed the bill reducing greenhouse gas emissions by 80%, I was glad to endorse it and get others to endorse it, and waited impatiently for supporting bills to get to that goal. And when I first heard about the lights out bill we're talking about today, I looked forward to supporting it and drumming up still more support. It's about time all that waste was stopped. I figured it was a no-brainer, since it would save people a lot of money. And I figured no one would weaken this bill very much except for maybe the utilities.

I was naive; I admit it.

I'd like to support this bill. But I won't. It's the exceptions. It's as if the bill didn't exist and I'm afraid it will never be improved if passed in its current incarnation. Building owners just pass along the costs of the wasted energy. Tenants chalk it up to the high cost of doing business in New York City. Let's lower that cost.

The exceptions for small stores, seasonal displays, and equipment requirements don't bother me that much. But the exception for "4. Where individuals are inside of a building at night" bothers me a lot. Pretty much all office buildings have someone inside SOMEwhere every night. Why not require motion detectors? The money saved would pay for them many *many* times over. It would be a net gain. Clearly, building owners and tenants are not going to install them unless required, or the exception would not have been written in.

So require them. Like smoke detectors are required.

They would save tenants money, they'd save building owners money, and they'd reduce New York City's greenhouse gas emissions because power plants don't have to burn as much to meet that wasteful demand.

Reducing greenhouse gas emissions is good for our health because clean air is healthy air.

It's good for business in another way because healthy workers are more productive.

Please improve this bill before passing it. Please.

If the bill has already been improved to require motion detectors since the version on the City Council web site was put up, I withdraw my opposition.

When the air or water are clean, thank an environmentalist. If not, become one. 'Nuff Said!

Thank you.

nuffsaid@riseup.net

www.nycsec.org

www.comicbookradioshow.com/eco-logic.html

# Urban Lighting, Light Pollution and Society

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After decades “in the shadows,” urban lighting is re-emerging as a matter of public debate. Long-standing truths are increasingly questioned as a confluence of developments affects lighting itself and the way it is viewed. Light has become an integral element of place-making and energy-saving initiatives alike. Rapidly evolving lighting technologies are opening up new possibilities, but also posing new challenges to planners. And awareness is growing that artificial illumination is not purely benign but can actually constitute a form of pollution. As a result, public policy frameworks, incentives and initiatives are undergoing a phase of innovation and change that will affect how cities are lit for years to come.

The first comprehensive compilation of current scientific discussions on urban lighting and light pollution from a social science and humanities perspective, *Urban Lighting, Light Pollution and Society* contributes to an evolving international debate on an increasingly controversial topic. The contributions draw a rich panorama of the manifold discourses connected with artificial illumination in the past and present—from early attempts to promote new lighting technologies in the late 19th and early 20th centuries to current debates on restricting its excessive usage in public space and the protection of darkness. By bringing together a cross-section of current findings and debates on urban lighting and light pollution from a wide variety of disciplines, it reflects that artificial lighting is multifaceted in its qualities, utilisation and interpretation.

Including case studies from the United States, Europe and the UK, *Urban Lighting, Light Pollution and Society* is one of the first works to take a serious assessment of light, pollution and places and is a valuable resource for planners, policy makers and students in related subjects.

This volume combines key findings of the research collaboration “Loss of the Night,” funded by the German Federal Ministry of Education and Research from 2010 to 2013, with cutting-edge research of leading international experts in the field. The editors were part of the social science and historical sub-projects within the “Loss of the Night” network.

**Josiane Meier** is a researcher and lecturer in urban and regional planning at the Technical University of Berlin’s Department of Urban and Regional Planning.

**Ute Hasenöhr** is a social and environmental historian at the Leibniz-Institute for Regional Development and Structural Planning in Erkner, Germany.

**Katharina Krause** is a research associate at the Leibniz-Institute for Regional Development and Structural Planning in Erkner, Germany.

**Merle Pottharst** is a researcher at the Technical University of Berlin’s Department of

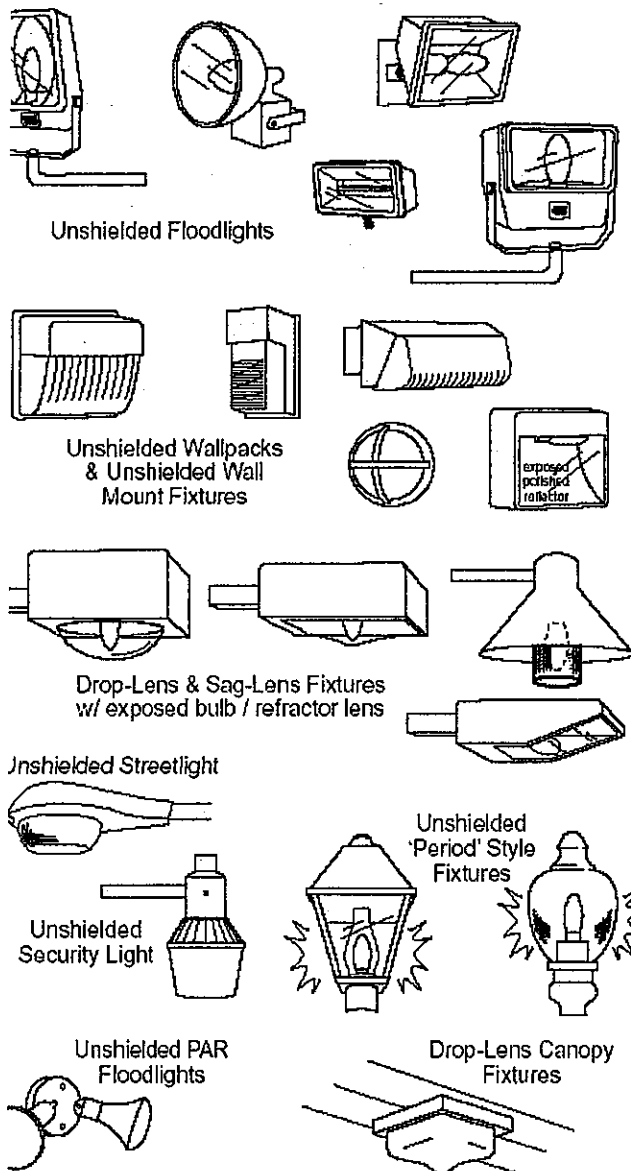


# RECOMMENDATIONS FOR GOOD OUTDOOR LIGHTING

1. Use shielded light fixtures (light bulb is recessed in an opaque cap and aimed downward) for outdoor lighting, including sign lighting.
2. Install timer controls or motion sensors to shut off lights when not needed.
3. Mount at a height that will limit light trespass onto other properties.
4. Use energy conservation light sources and at the minimum light output needed for safety. Avoid light bulbs which are in excess of 3000Kelvin to reduce glare and skyglow.
5. Check with the local Building Inspector or Planning Department for exceptions or for additional requirements for commercial site plan approvals.

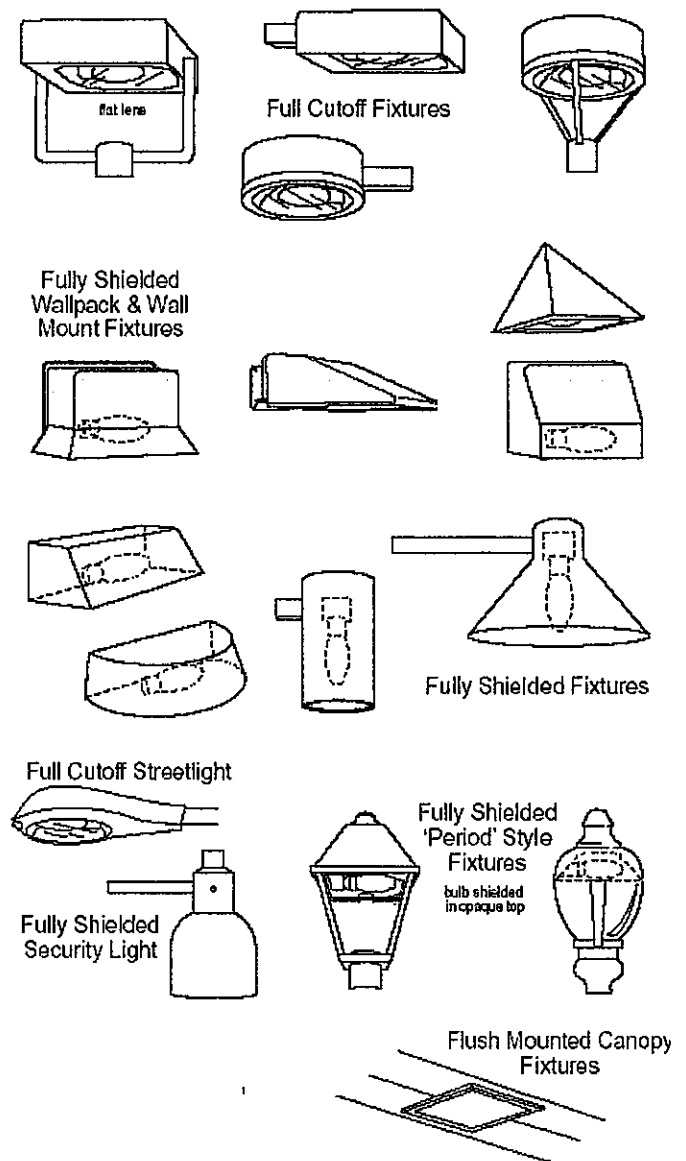
## UNACCEPTABLE

Fixtures that produce glare and light trespass



## ACCEPTABLE

Fixtures that shield the light source to minimize glare and light trespass and to facilitate better vision at night



For a complete selection of Fully Shielded and Full Cutoff Fixtures, request information from your local lighting supplier or electrician. See this website:

<http://www.darksky.org/mc/page.do?sitePageId=56422&orgId=idsa>

# New York State to dim lights to save migrating birds

BBC NEWS 28 April 2015 <http://www.bbc.com/news/world-us-canada-32491715>

Migratory birds are thought to be confused by constellations of city lights, causing them to fatally crash

**The state of New York is to turn off non-essential lights in state-run buildings to help birds navigate their migratory routes in spring and autumn.**

Migrating birds are believed to use stars to navigate but they can be disorientated by electric lights, causing them to crash into buildings.

The phenomenon, known as "fatal light attraction", is estimated to kill up to one billion birds a year in the US.

Millions of birds migrate through New York along the Atlantic Flyway route. Now those passing over the city by night will stand a better chance of making it further north.

New York Governor Andrew Cuomo said on Monday that bright outdoor lights will be turned off between 23:00 and dawn during peak migration seasons in spring and autumn.

The state will join several well-known New York landmarks that have already signed up to the National Audubon Society's Lights Out programme, including the Rockefeller Centre, Chrysler Building and Time Warner Centre.

"This is a simple step to help protect these migrating birds that make their home in New York's forests, lakes and rivers," Mr Cuomo said in a statement.

He also announced the new "I Love NY Birding" website, which will provide information on bird watching and how to participate in the Lights Out initiative.

The National Audubon Society already works with other major cities to protect birds from strikes, including Baltimore, Chicago, and San Francisco.

Fatal light attraction appears to affect migratory songbirds such as warblers, thrushes and sparrows more than local birds, who learn where they can fly safely.

Daniel Klem, professor of ornithology and conservation biology at Muhlenberg College who pioneered the study of window strikes, **told the BBC last year** that the strikes were particularly worrying because the fittest members of the population were just as likely to die in this way as weaker birds.

"You may be killing some very important members of the population that would be instrumental in maintaining its health," he said.

Writing in the **New Yorker** earlier this month, US novelist and bird-lover Jonathan Franzen criticised the developers of a Minnesota stadium for neglecting to use a specially patterned glass that may reduce collisions.

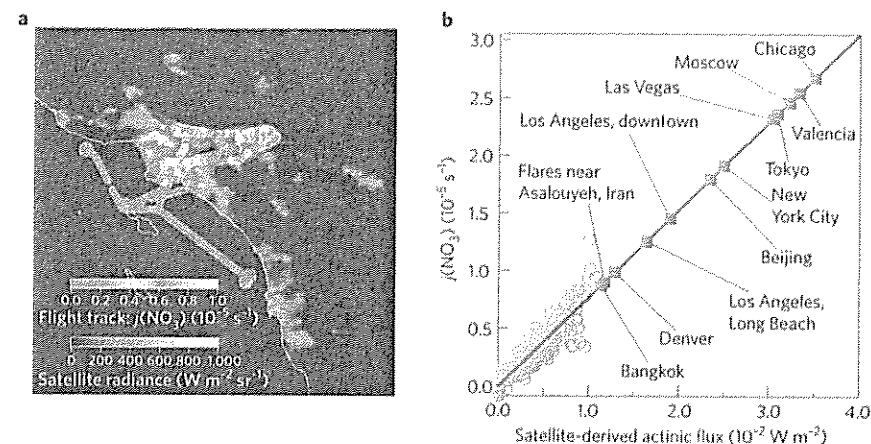
# City lights and urban air

**To the Editor** — Artificial lights are an essential part of human life at night, necessary for the safety and security of many human activities. However, the illumination of the night sky by artificial lights can adversely affect biological activities such as animal orientation<sup>1</sup>, together with human perception of the sky at night<sup>2</sup>. Here we show that city lights can also alter the concentration of nitrate radicals, an important atmospheric oxidant. These alterations have potential — albeit small — consequences for pollution levels the following day.

Nitrate radicals form from the reaction of nitrogen dioxide with ozone. These radicals are highly unstable in sunlight, but they build up during the night, when they function as a key atmospheric oxidant. During this time they react with numerous chemical species, including volatile organic compounds released by plants and human activities, and compounds essential for the production of tropospheric ozone the following day<sup>3,4</sup>. Nitrate radicals also react with nitrogen dioxide, forming dinitrogen pentoxide, a temporary nocturnal reservoir of nitrogen oxides that transforms into nitrogen dioxide when the sun rises. Nitrogen dioxide is another key component of tropospheric ozone production.

Using a research aircraft, we measured light intensities and types during the night over Los Angeles, USA, in May and June 2010 (see Supplementary Information) to determine the rate of nitrate radical loss induced by artificial lights (for calculations see ref. 5). At the same time, we measured the concentration of nitrate, dinitrogen pentoxide and ozone, to determine total nitrate radical loss (see Supplementary Information). Comparison of city-light-induced radical loss with total radical loss suggests that city lights account for up to 2–3% of nitrate radical loss in some regions of Los Angeles (Fig. 1a). The effect is greatest in dry and aged air masses, which have a lower propensity for dinitrogen pentoxide loss and thus a higher propensity to recycle nitrogen oxides the following day<sup>7</sup>.

We used one-dimensional model calculations to study the impact of city lights on nitrogen compounds under high and low levels of pollution (see Supplementary Information)<sup>8</sup>. We examined the impact of light levels



**Figure 1** | Light pollution in Los Angeles. **a**, We examined the intensity and quality of artificial lights during the night over Los Angeles in 2010, together with the concentration of trace gases, using a research aircraft. Using this data we calculated the rate of nitrate radical loss as a result of photolysis,  $J(\text{NO}_3)$ , shown by dots. Satellite-derived radiance is shown in the background for reference. We estimate that city lights account for 2–3% of nitrate radical loss during the night. **b**, We extrapolate our findings to other regions of the globe (blue) using satellite-based measurements of light intensity (orange) and show that light intensity probably influences nitrate radical loss elsewhere.

encountered during our study in Los Angeles, and higher light levels typical of a bright city centre, inferred from satellite data. Because photolysis breaks nitrate radicals down to nitrogen dioxide, light levels analogous to those seen over Los Angeles led to a reduction in nitrate radical levels, and an increase in nitrogen oxide levels, on the order of 1% or less in both the high- and low-pollution scenarios. In the brighter high- and low-pollution scenarios, nitrate radical levels were reduced by up to 4%, and nitrogen oxide levels were increased by up to 3.5%, compared with a control run without lights.

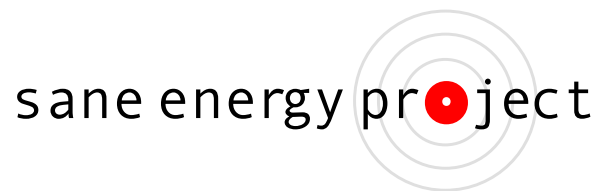
Night-time chemistry is known to influence ozone levels the following day<sup>8</sup>. However, city lights had a minimal effect on next-day ozone levels in our model simulations. The modelled change in ozone levels was generally smaller than the percentage change in nitrogen oxide levels, and varied in sign depending on the concentration of nitrogen oxides and volatile organic compounds. For example, in the high-pollution case the presence of bright city lights resulted in a 0.3% decrease in ozone levels the following day.

The discrepancy in the magnitude of the nitrogen oxide and ozone response

can be attributed to the nonlinear dependence of ozone on nitrogen oxides and volatile organic compounds, and the separation of processed layers in the nocturnal troposphere from fresh ground emissions, which reduces the influence of night-time chemistry on these emissions<sup>8</sup>. Furthermore, the model may be overestimating ground-level nitrogen oxide emissions, which also tends to reduce the influence of night-time chemistry on next-day ozone levels (see Supplementary Information).

Finally, we assessed the likelihood that city lights influence nitrogen chemistry in other urban areas around the globe (see Supplementary Information). We converted satellite data on light intensity into nitrate radical loss, using our aircraft measurements, and show that the influence of city lights on nitrate radical loss can be large in regions outside Los Angeles (Fig. 1b). We also find that satellite-derived estimates of light levels tend to correlate positively with independent satellite-derived estimates of nitrogen dioxide (see Supplementary Information)<sup>9,10</sup>. We therefore suggest that city lights are likely to influence nitrogen dynamics in other regions of the globe. □





City Council Hearing

April 29, 2015

Regarding: Int. No. 578

*A Local Law to amend the administrative code of the city of New York,  
in relation to limiting nighttime illumination for certain buildings.*

Chair Richards, Council Members, thank you for the opportunity to offer comment today.

**Sane Energy Project wholeheartedly supports bill 578, the “Lights Out” bill.**

We applaud the Council's efforts to eliminate wasteful energy use as well as light pollution, as this will result in lowering both our carbon footprint as well as bird strikes, and could even result in New Yorkers getting a better night's sleep.

The building types the law applies to are:

- (Group B) Businesses such as banks, insurance agencies, government buildings, police and fire stations, and doctor's offices; and
- (Group M) Mercantile, such as grocery stores, department stores, and gas stations.

**Energy savings:**

Elsewhere in the developed world, even in cities, less nighttime illumination is standard. The use of efficient lamping such as LEDS and fluorescents, as well as motion detectors, inside and outside buildings, is ubiquitous. New York *must* move in this direction, however, we must balance the need for safety and security, as well as the benefit of tourist dollars, with the need for energy savings. Americans will need some time to adjust to new levels of nighttime lighting, and New Yorkers who lived through the crime-ridden '70s and '80s may understandably need reassurance of their safety.

The Council has therefore included some common sense exceptions to the rule, for instance accounting for 24-hour groceries and gas stations, and to maintain the tradition of holiday window displays.

We will comment on three of the exemptions:

Section 2:

Landmarked buildings may be exempted by applying to LPC for a waiver.

As architecture geeks, we wholeheartedly support this exemption, however, even iconic landmark buildings could be shut off after midnight. Some of us are old enough to remember when midnight was gaged by the Empire State Building going dark, keeping only the top of its radio tower lit. Saturday Night Live's original opening sequence even celebrated that shut off time. We can revive that tradition.

We urge the Council to consider this addition to the rule before the Freedom Tower opens. The Top of the Rock observatory already closes at midnight. The Empire State building observatory remains open until 2am. However, if the city's landmarks were to go dark at midnight, the observatory would necessarily follow suit. A creative solution could be worked out with the Empire State Building, to be phased out over time, such as a credit to make up for any lost revenues between the hours of midnight and 2am.

Section 3:

Building owners may apply for an exemption for security lighting, to be coordinated with police.

We agree that security must be a top concern. We hope that businesses that are exempted will be directed to use motion detector lighting, and that constant or overly-bright flood lighting will be prohibited.

We also suggest that this prohibition be extended to stadiums and sports facilities, which often use extremely bright and tall floodlights. The Columbia track and football fields at 218th Street in Manhattan are one such literally glaring example: their flood lights remain on full blast, many late nights, while the fields are often used by only one or two maintenance workers.

Section 4:

While people remain inside, interior and exteriors may remain illuminated.

Smart security measures for office workers and business owners who work late are a must, however, especially in large office buildings with security personnel, the use of graphic eye systems, sunset-sensing lighting, motion detectors etc., can automatically respond to changing seasonal daylight, and greatly reduce energy waste. Only floors where people are working should be allowed to remain lighted, all others should go dark. Most forward-thinking businesses have already implemented such measures as a cost savings to themselves; these systems should be mandated for larger businesses who can afford them.

**Bird Strikes:**

In August of 2012, NPR reported:

“Modern architecture loves glass. But biologists say, as more glass buildings go up, more birds are dying.” That's a problem, because birds are seed dispersers; and they eat tons of insects. So every bird that's killed is an ecological benefit lost.

The American Bird Conservancy publishes an excellent guide to bird-friendly building design, and they note: Collision with glass is the single biggest known killer of birds in the United States, claiming hundreds of millions or more lives each year. The problem of bird collisions with glass is greatly exacerbated by artificial light. Light escaping from building interiors or windows that are made reflective by exterior light can attract birds, particularly during migration, or on foggy nights, or when the cloud base is low. Strong beams of light can cause birds to circle in confusion and collide with structures, each other, or even the ground. Others may simply land in lighted areas and must then navigate an urban environment rife with other dangers, including more glass. Glass curtain walls with tree-filled atriums inside are the most dangerous.

**In Conclusion:**

While preventing bird strikes is important, and this bill will help that, the real threat to birds, and species of all kinds, including humans, is climate change. Reducing wasted energy that causes global warming is the real benefit of the "Lights Out" bill. Thank you for sponsoring this bill. We strongly urge ALL members of the Council to vote yes and pass it unanimously.

Thank you.

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 187 Res. No. \_\_\_\_\_

in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: Lisa DiGrazia

Address: 325 West 93rd Street

I represent: asset

Address: \_\_\_\_\_

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. \_\_\_\_\_ Res. No. \_\_\_\_\_

in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: Daniel Karpis

Address: 3 Harbor Hill Drive

I represent: Professional Engineer

Address: 3 Harbor Hill Drive, Huntington NY 11742

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

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in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: John Lee

Address: \_\_\_\_\_

I represent: Mayor's office of sustainability

Address: Deputy Director for Buildings: Energy Efficiency

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THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. \_\_\_\_\_ Res. No. \_\_\_\_\_

in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: Michael Gilseman

Address: \_\_\_\_\_

I represent: Assistant Commissioner, DEP

Address: \_\_\_\_\_

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. \_\_\_\_\_ Res. No. \_\_\_\_\_

in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: Mark Silberman

Address: \_\_\_\_\_

I represent: General Counsel, LPC

Address: \_\_\_\_\_

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. \_\_\_\_\_ Res. No. \_\_\_\_\_

in favor  in opposition

Date: 4/29/15

(PLEASE PRINT)

Name: Mary Ellen Cronly

Address: 150 West End Ave NY NY 10023

I represent: United For Action + Private Citizen

Address: \_\_\_\_\_

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**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 578 Res. No. \_\_\_\_\_

in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: Anne Lazarus

Address: 524 East 20th St. 2F N.Y. N.Y. 10009

I represent: myself

Address: \_\_\_\_\_

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 578 Res. No. \_\_\_\_\_

in favor  in opposition

Date: 4/29/2015

(PLEASE PRINT)

Name: DEBORAH BROWN, RIVERKEEPER

Address: 165 Grand St., Newburgh, NY 12550

I represent: River Keeper, Inc.

Address: 20 Secor Rd., Ossining NY 10560

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 578 Res. No. \_\_\_\_\_

in favor  in opposition

Date: APR 29, 2015

(PLEASE PRINT)

Name: KEN GALE

Address: 220 E 85th St

I represent: NYC SAFE ENERGY COALITION, ECO-LOGIC WBAI-TV

Address: MURFSAID @ RISEUP.NET

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 578 Res. No. \_\_\_\_\_

in favor  in opposition

Date: 4/29/15

(PLEASE PRINT)

Name: Jay Peltz

Address: 1385 Boston Post Rd, Coxsack, NY

I represent: Food Justice Alliance of NY

Address: Same

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. \_\_\_\_\_ Res. No. \_\_\_\_\_

in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: Ling Tsou

Address: \_\_\_\_\_

I represent: United for Action

Address: \_\_\_\_\_

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 0579-205 Res. No. \_\_\_\_\_

in favor  in opposition

Date: April 29, 2015

(PLEASE PRINT)

Name: Catherine Skopie

Address: 140 W. Broadway, NYC, NY, 10013

I represent: PCOM-NY - Peoples' Divorce Movement -

Address: New York

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 578 Res. No. \_\_\_\_\_

in favor  in opposition

Date: 4/29/15

(PLEASE PRINT)

Name: GAIL CLYMA

Address: 1 GRACIE TERR. ~~APT. 7E~~

I represent: SELENE-NYC

Address: (Internet)

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. \_\_\_\_\_ Res. No. \_\_\_\_\_

in favor  in opposition

Date: \_\_\_\_\_

Name: Susan (PLEASE PRINT) Harder

Address: 440 Kent Ave

I represent: 2 DA

Address: \_\_\_\_\_

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. \_\_\_\_\_ Res. No. \_\_\_\_\_

in favor  in opposition

Date: \_\_\_\_\_

Name: Susan Elgin (PLEASE PRINT)

Address: 71 W 23<sup>rd</sup> St, NY, NY

I represent: NYC Audubon

Address: \_\_\_\_\_

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 573 Res. No. \_\_\_\_\_

in favor  in opposition

Date: 25 APRIL 2015

(PLEASE PRINT)

Name: JAMES KARL FISCHER AIA RIBA

Address: 394 BROADWAY 5TH FLOOR N.Y. 10011

I represent: THE ECOLOGICAL LITERATURE INSTITUTE

Address: SANOS

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. \_\_\_\_\_ Res. No. \_\_\_\_\_

in favor  in opposition

Date: 4/29/15

(PLEASE PRINT)

Name: MAV MOORHEAD

Address: \_\_\_\_\_

I represent: DCS, NYH20

Address: \_\_\_\_\_

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**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. \_\_\_\_\_ Res. No. 578  
 in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: KIM FRACZEK (FRAH-CHECK)

Address: 250 MOORE ST. BROOKLYN 11206

I represent: SANE ENERGY PROJECT

Address: \_\_\_\_\_

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL  
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 587 Res. No. \_\_\_\_\_  
 in favor  in opposition

Date: \_\_\_\_\_

(PLEASE PRINT)

Name: Ali Davis

Address: 570 Lexington Ave.

I represent: REBNY

Address: \_\_\_\_\_

Please complete this card and return to the Sergeant-at-Arms