



# Bird Friendly Design in Austin

Austin Watershed Protection  
Leslie Lilly



WATERSHED  
PROTECTION

# City Staff

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# Resolution

## 20241121-073

- Came out of a recommendation from a working group and Resolution [20210902-050](#) on Lights Out Austin
- Directs staff to:
  - Update on Light's Out Austin
  - Explore integration of bird-friendly building techniques for new low-rise, mid-rise and high-rise buildings
  - Conduct a feasibility analysis on the potential impacts of these standards
  - Seek input from stakeholders, including developers, environmental organizations, and the public.





# Migration and Habitat

- Austin was designated a Bird City in 2023
- Austin within North America's Central Flyway
- Over **400** species of birds
- Edwards Plateau and the Blackland Prairies habitat
- Premier destination for birdwatchers throughout most of the year.
- Birding generates more than \$5 billion in annual ecotourism revenue in Texas (\$279 billion nationwide)

# The Problem

**Birds do not perceive glass as a barrier.**

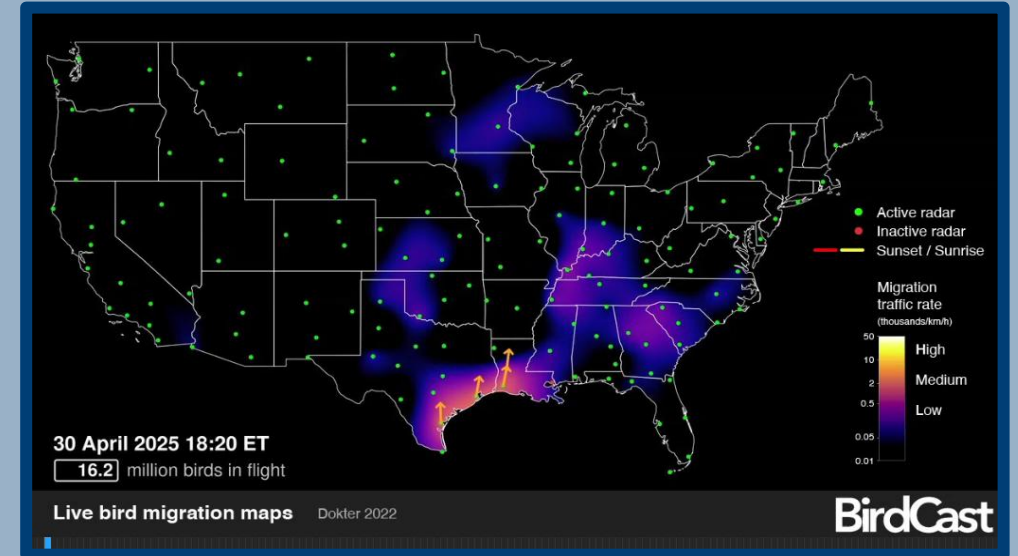
In **daytime**, birds encounter reflective or translucent glass.

In **nighttime**, birds encounter artificial sources of light.

**Birds fly to these confusing features, without seeing the glass barriers.**

The collision is deadly.

Bird collisions have both **local relevance** and **enormous impact**.



**An estimated  
1 billion  
birds die  
every year.**



A vibrant, multi-colored bird, possibly a species of finch or sparrow, is perched on a dark, textured branch. The bird has a bright blue head with a red ring around its eye, a red breast, and yellow-green wings. Its body is primarily orange-brown with dark streaks on the wings and tail. To the left of the bird is a dark green wire mesh fence. The background is a solid, muted green color.

# Solutions



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# Glass Strategies

## Bird-friendly design includes:

- reducing the use of glass
- reducing glass exposure (using solar shading, external insect/solar screens, louvers, etc.)
- incorporating bird-friendly signals (markers) in or on the glass
- UV coating, glazing, and etched or fritted glass patterns that follow the "2x2 rule"



# Design Strategies

## Design

Incorporate physical barriers and architectural design that improve glass visibility

- Options include exterior screens, shutters, awnings, facades, and structural shading systems



*Tracy Aviary, Salt Lake City, Utah*

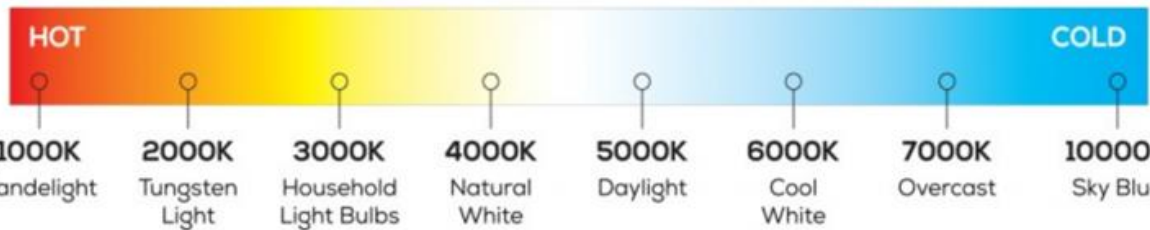
# Lighting

## Exterior

- Eliminate uplighting, use fully shielded fixtures that direct light downward, and avoid event searchlights
- Use lighting management systems that can automatically reduce non-essential lighting during peak migration
- Use warmer lightbulbs (as white/blue light can disorient birds)

## Interior

- Program automatic controls with timers and occupancy sensors
- Use window treatments to reduce light spillage
- Schedule janitorial services during daylight hours



# Benchmarking:

## What have other cities done?

### New York City (2021)

- 90% of the first 75 feet of a new building's envelope use bird-friendly materials, including alterations to existing glazing.
- Structures such as glass awnings and handrails must also comply.
- The materials must have a Threat Factor (TF) of 25 or less.

### Arlington County, VA

- Bird friendly design tied to voluntary density bonus incentives
- Evaluates facade between 8 and 36 feet, maximum TF of 15
- Exception for non-compliant materials, 10 ft<sup>2</sup> of every 100 ft<sup>2</sup> of facade may exceed TF 15
- Includes outdoor lighting requirements
- Non-compliant projects pay into a Green Building Fund



# Current Bird-Safe Design in Austin



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# Austin Energy Green Building Program

- Austin-specific green building rating program administered by Austin Energy
- Integrated as a minimum requirement in zoning ordinances and density bonus programs as well as all COA buildings
- Ten core requirements plus several voluntary measures, which include criteria for bird collision deterrence and light pollution reduction



AUSTIN ENERGY  
**GREEN  
BUILDING**

**RESOLUTION NO. 20210902-050**

**WHEREAS**, each year, nearly two billion birds travel through the State of Texas; and

**WHEREAS**, this number represents between a quarter and a third of all birds migrating throughout the United States; and

**WHEREAS**, it is important to recognize this massive migration of birds occurs at night; and

**WHEREAS**, these birds must contend with a rapidly increasing but still under-recognized threat of light pollution, which attracts and disorients these migrating birds, confusing them and making them vulnerable to collisions with buildings and other urban threats; and

**WHEREAS**, more than one billion birds die in collisions with buildings in the United States annually, according to Lights Out Texas, an effort that began in 2020 and is led by a coalition of partners that includes conservation non-profits, universities, local governments, and Texans dedicated to the conservation of birds; and

**WHEREAS**, the extensive and intense light pollution from Texas cities, combined with the enormous bird migration, creates a particularly hazardous environment; and

**WHEREAS**, in one study, Texas cities including Dallas, San Antonio, and Houston were among the top American metropolitan areas exposing migrating birds to light pollution; and

# Lights Out Austin

- City-wide initiative that raises awareness of the risk light pollution poses to birds by asking businesses, residents, and governments to turn off lights at night during bi-annual bird migrations
- City-managed facilities are participating by:
  - Turning off all non-essential lights from 11:00pm to 6:00am
  - Refraining from use of landscape lighting,
- Where lighting is essential, dark skies-friendly practices are being used throughout migration season:
  - Aim lights downward.
  - Use of lighting shields to direct light downwards and to avoid light trespass.
  - Use motion detectors and sensors so lights are only on when needed.
  - Close blinds at night to reduce the amount of light being emitted from windows.
  - Adjust custodial schedules to end by 11:00 pm.
  - Ask custodial staff to ensure that lights are off after they finish their work.

# Site Specific Regulations

## Planned Unit Developments

- Zoning ordinance that is site-specific and has special requirements related to the superior development of a project in exchange for entitlements and modifications to existing code requirements
- Several newly approved PUD ordinances have been approved with bird-safe building design

## Other regulatory mechanisms

- Interlocal Agreements, Density Bonus Programs (impacted by SB 840)
- [Hays ISD Interlocal Agreement](#) was developed with the commitment of the school district to build its new High School meeting the bird-friendly design criteria

# Glass and Lighting Requirements in COA Code

- [Site Development Standards Exterior Lighting](#) requires fixtures that are either fully shielded or full cut-off for development in the zoning jurisdiction.
- [Building Design Standards Glazing and Façade Relief Requirements](#) provide design standards for development of any non-residential land use in the zoning jurisdiction.
- [Hill Country Roadway Overlay](#) requirements. Buildings within the overlay may not be constructed with mirrored glass with a reflectance of more than 20 percent
- [Waterfront Overlay Combing District](#) limits exterior mirrored glass or glare producing glass surface building materials
- [Traditional Neighborhood District](#) development standards have requirements for hooded and shielded exterior lighting and some prohibitions on "highly reflective surfaces"

A detailed illustration of a colorful bird, possibly a species of sparrow or finch, perched on a dark, textured branch. The bird has a vibrant blue head with a prominent red eye-ring, a bright red breast, and yellow-green wings. Its body is primarily orange-brown with dark streaking on the wings and tail. The bird is facing left. To the left of the bird is a dark green wire mesh structure. The background is a solid, muted green color.

# Feasibility Analysis



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# Cost Analysis

## Other Cities:

**Madison:** estimates of 2-3% of project

## New York:

- **IMPACT ON REVENUES:** It is estimated that there would be no impact on revenues resulting from the enactment of this legislation.
- **IMPACT ON EXPENDITURES:** It is anticipated that there would be no impact on expenditures resulting from the enactment of this legislation.

**Berkley:** Given the variety of possible products and project types, staff are unable to precisely quantify how much additional cost bird safe materials would entail in every situation

# Cost Analysis: Commercial Glass

Window Type Cost (Price Range Per Square Foot)	
Standard	\$12-\$15
Fritted	\$15-\$25
Etched	\$25-\$35
Ultra-Violet (UV)	\$32-\$45

## Retrofit Options:

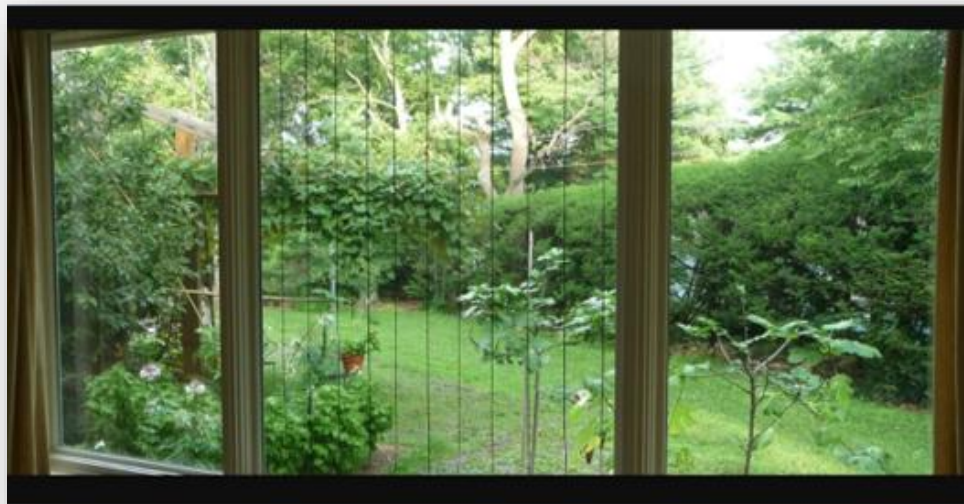
- Apply treatments to the outside of windows
- Range from \$12.75-\$14.00+ sq ft for both product and installation.
- Warranty of up to 15 years
- Options that have additional benefits for graffiti prevention

## Other Considerations:

- Glass is sold in bulk
- Consider a non-directional pattern
- Energy code requirements/lamination requirements

# Cost Analysis: Residential Glass

- Custom homes choose to order commercial glass
- Cost-neutral strategies (like bug screens, exterior window shades, awnings, and hurricane shutters)
- DIY solutions: range \$0.50-\$7.00/sq ft, with varied warranties.



*DIY paracord hung in a 2" x 2" pattern*



*DIY bird-friendly tape in a 2" x 2" pattern*

# Cost Analysis: Lighting

- Bird-friendly lighting in commercial buildings is a relatively low-cost strategy with high returns
- Products are often aligned with broader sustainability goals and typically result in energy savings that offset costs in under a year.
- Informed decision making
- Solutions include:
  - Automatic lighting controls
  - Shielded light fixtures
  - Bulb temperature



# Feasibility: Review & Inspection

- DSD Building Plans Examiners
  - Commercial Plan review already looks at projects facades for projects > 10,000 sqft
- AEGB staff familiar with review criteria
- Complaint based compliance





# Co-Benefits

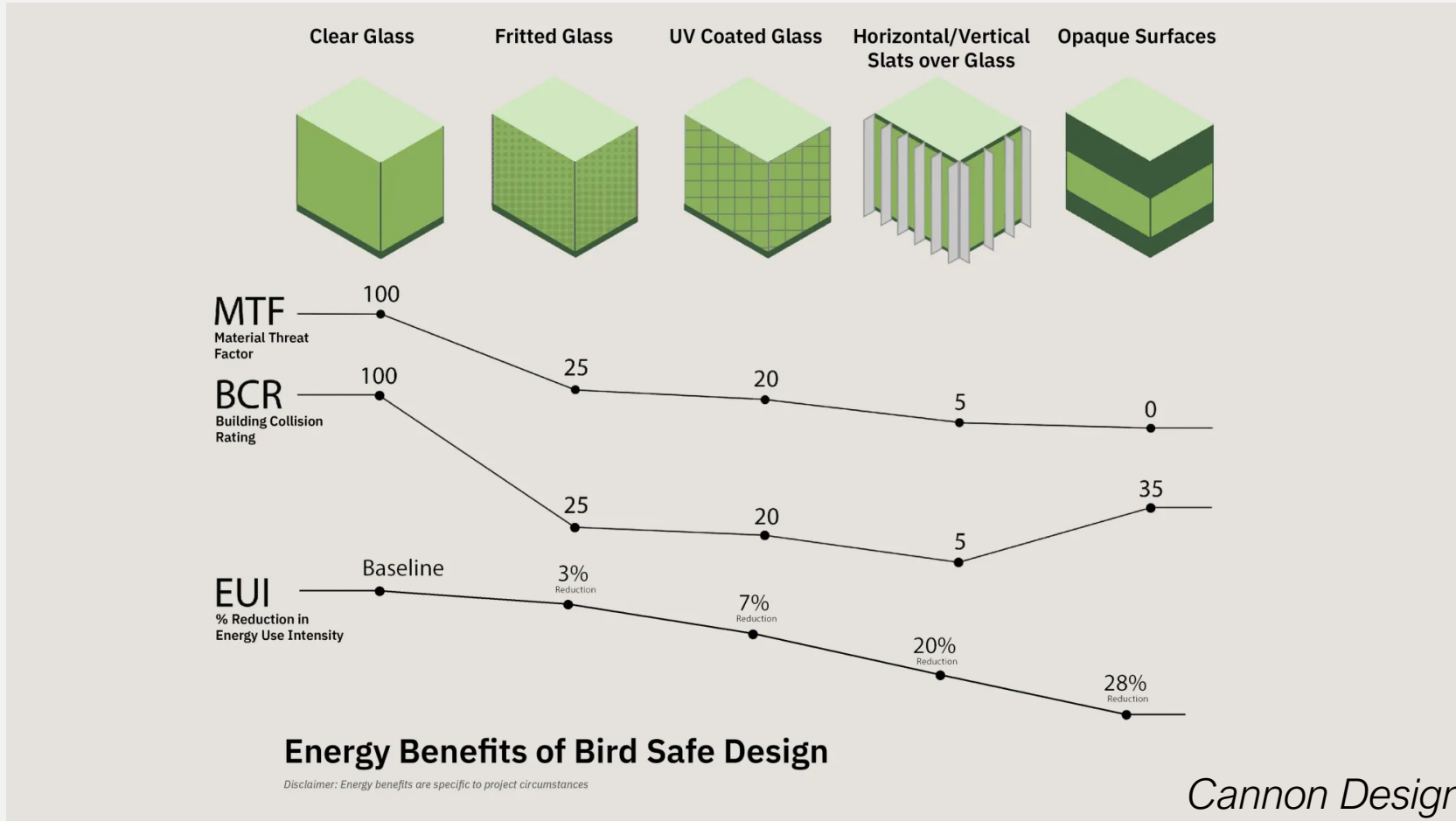


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# Co-Benefits

## Sustainability

Improvement to Energy efficiency



**LEED projects save energy by saving birds**

[usgbc.org/articles/leed-projects-save-energy-saving-birds](https://usgbc.org/articles/leed-projects-save-energy-saving-birds)

# Co-Benefits

## Safety

*Wildfire Protection & Lighting*

Placing landscaping away from buildings limits vegetation reflections and aligns with WUI code



George Fleenor



George Fleenor

Brighter doesn't always mean safer



# Co-Benefits

## Conservation, Biodiversity, Community Engagement, and Ecotourism

- Birds provide essential ecosystem services, such as pest control and pollination
- Birding generates more than \$5 billion in annual ecotourism revenue in Texas
- Studies show that bird diversity can lead to better mental and emotional health for residents
- Help residents build a relationship with outside world
- Empower the public to report bird strikes and participate in community science



# Best Practices and Staff Recommendations



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# General BPMs for New Construction

Type of New Construction	Glass Treatments/Façade	Lighting Solutions	Behavioral Practices
<b>Low Rise</b> (1-3 floors)– mostly residential and smaller commercial structures (many under 10k sqft)	<p><u>Residential</u></p> <ul style="list-style-type: none"> <li>Installation of exterior window treatments:               <ul style="list-style-type: none"> <li>bug screens</li> <li>exterior window shades</li> <li>awnings</li> </ul> </li> </ul> <p><u>Commercial</u></p> <ul style="list-style-type: none"> <li>Required on 100 percent of buildings</li> <li>Reduce the use of glass in façade design</li> <li>Installation of glass with TF of 30 or less on all external surfaces.</li> </ul>	<ul style="list-style-type: none"> <li>Shielded light fixtures.</li> <li>Motion-activated exterior lights.</li> <li>Lamps of &lt;3000k temp.</li> </ul>	<ul style="list-style-type: none"> <li>Lights out practices during peak migration.</li> <li>Adding “do it yourself” window treatments to untreated windows.</li> <li>WUI landscaping</li> <li>Documenting bird strikes in online platform.</li> </ul>
<b>Mid Rise</b> (4-12 floors) – combination of residential multi family and commercial	<ul style="list-style-type: none"> <li>100/100/100 rule</li> <li>Reduce the use of glass in façade design</li> <li>Installation of glass with TF of 30 or less on all external surfaces.</li> <li>Bird safe materials on high risk elements including, sky bridges, green roof areas, terraces, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Shielded light fixtures</li> <li>Lighting directed down.</li> <li>Exterior and Interior lighting on timers for after midnight and during peak migration.</li> <li>Lamps of &lt;3000k temp.</li> </ul>	<ul style="list-style-type: none"> <li>Building management communications to tenants about “lights out program” or bird collision monitoring.</li> <li>Coordination of landscape decisions with proximity to untreated glass</li> </ul>
<b>High Rise</b> (more than 12 floors) – mixed use commercial	<ul style="list-style-type: none"> <li>100/100/100 rule</li> <li>Reduce the use of glass in façade design</li> <li>Installation of glass with TF of 30 or less on all external surfaces.</li> <li>Bird safe materials on high risk elements including, sky bridges, green roof areas, terraces, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Shielded light fixtures</li> <li>Lighting directed down.</li> <li>Exterior and Interior lighting on timers for after midnight and during peak migration.</li> <li>Lamps of &lt;3000k temp.</li> </ul>	<ul style="list-style-type: none"> <li>Building management communications to tenants about “lights out” program or bird collision monitoring.</li> <li>Coordination of landscape decisions with proximity to untreated glass.</li> </ul>

# Staff Recommendations

## Land Development Code Amendment

- Commercial and multifamily buildings exceeding 10,000 square feet would be required to meet bird-safe design performance standards as measured by Material Threat Factor rating of 20 or less for all building surfaces up to 100 ft.
- Implementation of dark sky lighting requirements
- A potential waiver option for deeply affordable housing projects

## Austin Energy Green Building Program

- Update planned for 2030 may propose Bird Friendly Design as core measure (currently elective)
- Update Green Building Policy

## Residential Opportunities

- Residential education campaign (handouts provided as appendices in report)

# Proposed Timeline

<b>Boards and Commissions</b>	<b>Date</b>	<b>Recommendation</b>
<b>Environmental Commission</b>	Sept. 17 <sup>th</sup> , 2025	Recommended
<b>Design Commission</b>	Sept. 22 <sup>nd</sup> , 2025	TBD
<b>Animal Advisory Commission</b>	Oct. 13 <sup>th</sup> , 2025	TBD
<b>Downtown Commission</b>	Oct. 15 <sup>th</sup> , 2025	TBD
<b>Joint Sustainability Committee</b>	Oct. 22 <sup>nd</sup> , 2025	TBD
<b>Planning Commission</b>	Oct. 28 <sup>th</sup> , 2025	TBD

# Find out more:

Email the WPD Policy Team –  
[Leslie.Lilly@austintexas.gov](mailto:Leslie.Lilly@austintexas.gov)

[American Bird Conservancy: Bird  
Conservation Results Across the Americas](#)



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