



Office of the City Manager

PUBLIC HEARING

June 6, 2023

To: Honorable Mayor and Members of the City Council

From: Dee Williams-Ridley, City Manager

Submitted by: Jordan Klein, Director, Planning and Development

Subject: Bird Safe Building Requirements; Adding Berkeley Municipal Code Section 23.304.150

RECOMMENDATION

Conduct a public hearing and, upon conclusion, adopt first reading of an ordinance adding Berkeley Municipal Code Section 23.304.150 establishing Bird Safe Building requirements (“bird safe requirements”) for projects that require a building permit.

SUMMARY

On November 12, 2019, the Community Environmental Advisory Commission (CEAC) presented an action item to the City Council recommending that the City of Berkeley amend the Berkeley Municipal Code (BMC) to include a new Chapter establishing bird safety requirements for new construction and significant renovations.

The proposed ordinance (***Attachment 1***) establishes Bird Safe Building requirements (“bird safe requirements”) for development projects in Berkeley that require a building permit. The ordinance would:

- Immediately apply to all transparent and reflective surfaces for all non-residential projects and for larger residential buildings with 10,000 square feet or more gross floor area.
- Be phased-in over a period of two to five years for smaller residential buildings with less than 10,000 square feet gross floor area, certain affordable housing projects, and window replacements on existing buildings (see *Phase-In Periods for Certain Projects*, below).
- Include three compliance paths, ranging from window films and screens, to specialized transparent material containing bird safe patterns through fritting or other treatments.

### FISCAL IMPACTS OF RECOMMENDATION

As discussed below in the “Cost and Availability” subsection of this staff report, bird safe materials could increase the cost of private construction projects, as well as public projects undertaken by the City of Berkeley. In addition, enforcement of the proposed ordinance would be undertaken alongside existing zoning and code compliance responsibilities, and may require additional staffing resources depending on the volume of applicable permits and/or complaints received.

### CURRENT SITUATION AND ITS EFFECTS

The Bird Safe Building ordinance supports the City’s Strategic Plan goal of being a global leader in protecting the environment.

Birds do not have the same depth perception or contrast sensitivity as humans; as such they cannot see glass. At night, which is when most birds migrate, guided by magnetic sensors in their retinas that pick up on red and warm-white light, light distracts and disorients them, often leading to collisions.<sup>1</sup> A 2014 study from the Cooper Ornithological Society estimated that between one hundred million and one billion birds die every year in collisions with built structures, and the Golden Gate Audubon Society estimates that between 100,000 and 600,000 birds die in Berkeley every year from collisions with existing buildings.<sup>2</sup> Bird collisions with windows are a leading cause of human-induced bird deaths in the United States, second only to outdoor cats.

Berkeley is located within the Pacific Flyway, a major migratory route for birds. When birds encounter unfamiliar urban areas along the migratory path, they are at particular risk for collisions and death. The City is also adjacent to the San Francisco Bay, one of North America’s most ecologically important estuaries and an international biodiversity hotspot because of the large number of birds, animals, and plants found there, many of which are found nowhere else. The region is also recognized as a site of “Hemispheric Importance” for shorebirds by the Western Hemisphere Shorebird Reserve Network.<sup>3</sup>

A handful of jurisdictions, both locally and across the county, have established bird safe requirements in their planning or building codes. Those regulations are summarized in a comparison table in **Attachment 2**. Some recently-approved projects, including Berkeley Commons at 600 Addison Street, the Bayer Campus expansion, and the Residence Inn at 2121 Center Street, include bird safe glass. The proposed ordinance would apply new objective standards within the zoning ordinance by indicating the project types required to include bird safe materials, and verifiable compliance paths.

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<sup>1</sup> <https://www.audubon.org/news/building-collisions-are-greater-danger-some-birds-others>

<sup>2</sup> [http://nas-national-prod.s3.amazonaws.com/documents/loss\\_et\\_al\\_bird-building\\_collisions\\_condor\\_2014.pdf](http://nas-national-prod.s3.amazonaws.com/documents/loss_et_al_bird-building_collisions_condor_2014.pdf); April 18, 2023. Golden Gate Audubon Society letter to Design Review Committee.

<sup>3</sup> <https://ca.audubon.org/conservation/conservation/seas-shores/san-francisco-bay>

**Proposed Ordinance**

The ordinance recommended by the Planning Commission would amend the BMC to include a new section, “BMC Section 23.304.150 Bird Safe Building,” that would include:

***Purpose Statement***

**A. Purpose.** The purpose of this section is to reduce bird mortality from windows and other transparent or reflective buildings or building features known to increase the risk of bird collisions.

Consistent with the style guide adopted as part of the Baseline Zoning Ordinance, the proposed ordinance includes a Purpose Statement. The proposed language is taken largely from the Purpose Statement included in the CEAC’s suggested Bird Safety Ordinance.

***Applicability***

The ordinance would apply to projects that require a building permit and vary based on primary land use and, for residential or mixed-use, the size of the overall building. The requirements would *not* apply to existing windows or other transparent materials that are *not* proposed to be replaced.

Project Type: The ordinance would distinguish between three project types:

1. New construction that includes transparent or reflective material;
2. New or replacement transparent or reflective material on existing buildings; and
3. New or replacement structures or features that are largely transparent or reflective by design (e.g., greenhouses, glass walls, noise barriers).

Primary Land Use and Building Size: The ordinance would distinguish between non-residential and residential/mixed-use projects, and would also distinguish between larger and smaller residential/mixed-use developments (with a 10,000 square foot floor area threshold), consistent with the Planning Commission’s recommendation.

As outlined in **Attachment 2**, while most jurisdictions include exemptions for smaller projects, including single family homes, duplexes, or smaller residential projects up to two stories, the Planning Commission recommended against including any exemptions in Berkeley’s ordinance.

Applicable Building Locations: The ordinance identifies the locations of transparent or reflective material that would be covered by the ordinance for each project type based on their primary land use. Notable aspects of these requirements include:

***All Transparent or Reflective Materials.*** Bird safe requirements would apply to all transparent or reflective materials, regardless of window size.

*100 Feet Above Grade.* Bird safe requirements would apply to eligible transparent or reflective surfaces located between the ground and 100 feet above grade. For comparison, the City of New York’s requirements apply to the first 75 feet above grade, and Mountain View, Oakland, San Francisco and Evanston, Illinois apply their standards to the first 60 feet above grade.

*High-Risk Features – No Grade Limit.* Bird safe requirements would apply to specific transparent or reflective building components that are particularly susceptible to bird-glass collisions, regardless of location above grade. High-risk features are railings, awnings, windbreak/windscreen panels, acoustic barriers, skywalks, greenhouses, glass walls, rooftop appurtenances, balconies and exterior decorative panels or signage. These components were specifically identified by the Planning Commission and Subcommittee as elements to be included due to higher collision risk. A number of jurisdictions, including New York City, Alameda, and Mountain View, take similar steps to regulate these building elements.

Table 1. Bird-Safe Building Requirements

<b>Project Type</b>	<b>Applicable Building Location(s)</b>
<b>Non-Residential</b>	
New Construction or Addition	All transparent or reflective material located between the ground and 100 ft. above grade.
New or Replacement Transparent or Reflective Material on Existing Building	All transparent or reflective material located between the ground and 100 ft. above grade.
High-Risk Features	All high-risk features located at any grade.
<b>Residential or Mixed Use</b>	
New Construction or Addition, Building with 10,000 sq. ft. or more of gross floor area	All transparent or reflective material located between the ground and 100 ft. above grade.
New Construction or Addition, Building with less than 10,000 sq. ft. of gross floor area	All transparent or reflective material located between the ground and 100 ft. above grade.
New or Replacement Transparent or Reflective Material on Existing Building	All transparent or reflective material between the ground and 100 ft. above grade.
High-Risk Features	All high-risk features located at any grade.

Phase-In Periods for Certain Projects:

1. *New Affordable Housing Projects.* The proposed ordinance includes a phase-in for affordable housing projects. Residential or mixed-use residential projects

where more than 50 percent of the residential unit floor area is affordable would be exempt from most of the ordinance requirements until January 1, 2025. Any high-risk feature would be subject to the applicable bird safe requirements.

2. *New Smaller Residential Projects.* Consistent with Planning Commission and Design Review Committee direction to provide a phase-in period for smaller residential projects, the proposed ordinance would not apply to smaller residential projects until January 1, 2025, as long as those projects do not include any façade where 30 percent or more of the façade's area consists of windows or reflective materials. This phase-in period would allow smaller builders and individual property owners to learn about and prepare to meet the requirements, and for the local construction materials market to adjust to make bird safe materials readily available to smaller customers.
3. *Existing Buildings.* The proposed ordinance also includes phase-in provisions for projects that add or replace windows or reflective materials on existing buildings, as long as those projects do not include any façade where 30 percent or more of the façade's area consists of windows or reflective materials. For eligible non-residential projects, the phase-in date would be January 1, 2025, and for eligible residential projects, the phase-in date would be January 1, 2028.

Projects that submit compliant SB 330 preliminary applications are vested into rules that are in effect at that time. SB 330 vesting would carry over for compliant projects, including eligible exemptions. For example, if a qualifying affordable housing project submits an SB 330 compliant preliminary application before January 1, 2025, the project would only be subject to the requirements for New or Replacement Transparent Structures or Features.

### ***Bird Safe Requirements***

The ordinance includes the following three methods of compliance for windows, transparent or reflective materials, or any elements or structures covered by the ordinance. There is overlap between the three compliance paths. For example, the American Bird Conservancy Database includes products that would comply with the required patterned glazing treatment and products that are exterior screens.

1. American Bird Conservancy (ABC) Threat Factor Rating: An element or material would comply with the ordinance if it is listed in the ABC's online *Glass Collisions Products and Solutions Database*<sup>4</sup> with a Threat Factor Rating of 30 or less at the time of Building Permit issuance.<sup>5</sup> According to the ABC, a Threat Factor of 30 is the organization's upper threshold for categorizing materials as bird friendly.

<sup>4</sup> <https://abcbirds.org/glass-collisions/products-database/>

<sup>5</sup> ABC's Material Threat Factor (TF) rating system tests, assesses and classifies materials on a scale of 0 to 100 to provide a relative measure of birds' ability to see and avoid patterned glass and other materials. The lower the TF, the more effective the material will be at reducing collisions. For more information, see ABC's Threat Factor page: <https://tinyurl.com/4k2v2stb>.

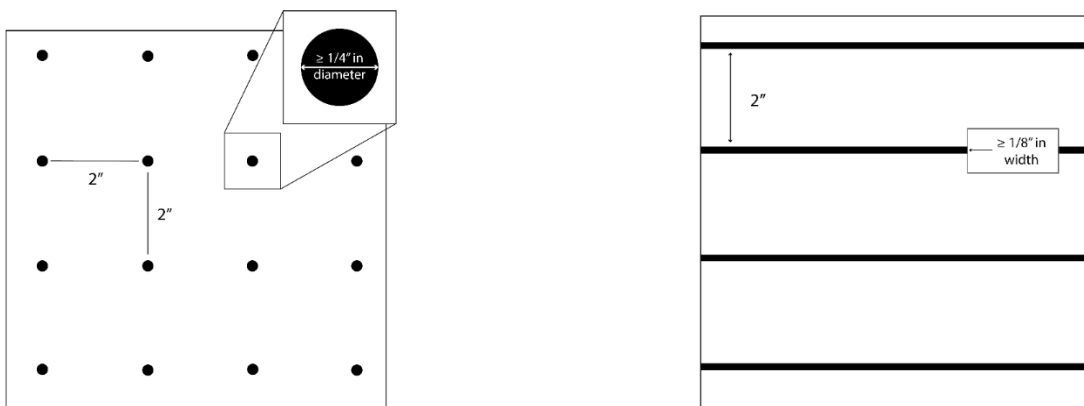
ABC's *Glass Collisions Products and Solutions Database* contains more than 170 products. In addition to windows, the database includes window films, decals, paints, exterior screens and other treatments, each of which includes an assigned Threat Factor and information about the manufacturer.

2. Patterned Glazing Treatments: As an alternative to selecting a product from ABC's *Glass Collisions Products and Solutions Database*, an element or material would comply with the ordinance if it includes patterns that are etched, fritted, stenciled, silk-screened or otherwise permanently incorporated into the transparent material.

The specific language in the draft ordinance related to this compliance path is from staff's initial recommendation to the Planning Commission, and differs from the Planning Commission's recommended language. Project planners are unable to administer requirements for building materials at the technical level of detail included in the Planning Commission—and Golden Gate Audubon—recommendation. See **Attachment 7** containing a redlined version of staff's initial recommendation, revised with Golden Gate Audubon's recommendations.

The proposed ordinance details how patterns must be spaced on the material and upon which window surface (exterior or interior) a pattern must be located. For example, for a pattern that utilizes dots or other isolated solid shapes, each dot or shape must be at least 0.25 inches in diameter and be no more than 2 feet apart in any direction. If the pattern utilizes lines, it must be at least one-eighth of an inch in width and spaced no more than 2 inches apart. Figure 1 illustrates this compliance path.

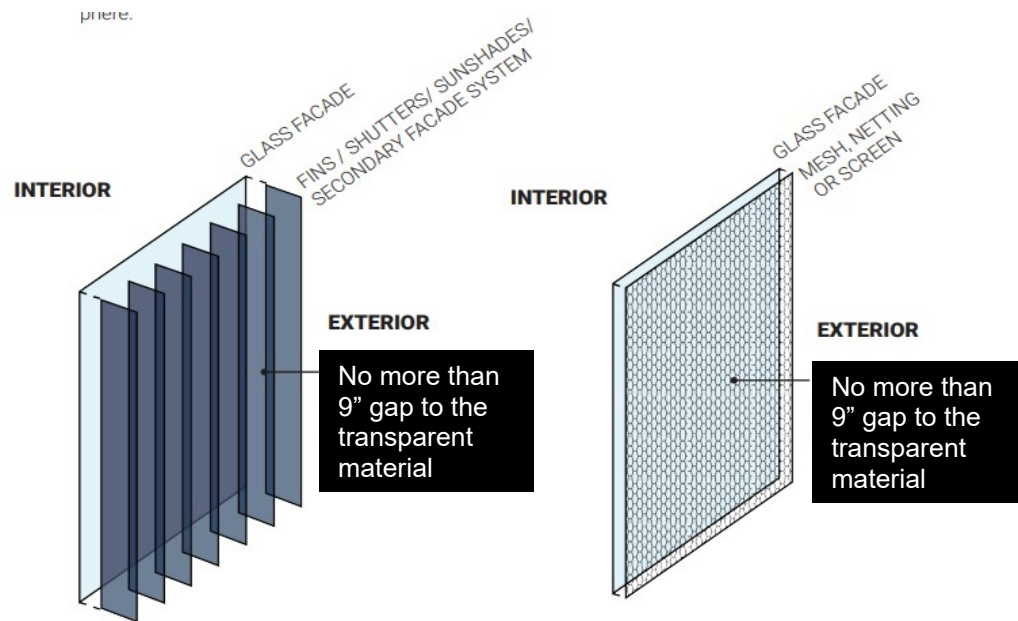
**Figure 1: Patterned Glazing Treatments**



3. External Screens, Shutters or Shading Devices: As an alternative to selecting a product from ABC's *Glass Collisions Products and Solutions Database*, an element or

material would comply with the ordinance if it were covered with an exterior screen, shutter or shading device, or insect or solar screen that was permanently installed on the building exterior. Such a treatment would not create any gaps larger than 9 inches in any dimension (that is, a 9-inch diameter object could not pass through the treatment and strike the window or material). Figure 2 provides an illustration of this compliance path.

**Figure 2: External Screen, Shutter or Shading Device**



**Cost and Availability**

The Planning Commission and the Design Review Committee both requested more information about (a) the relative cost of bird safe materials compared to standard windows and (b) the availability of materials that would comply with the ordinance, particularly for smaller builders and individual homeowners.

Staff conducted research and interviewed builders, architects, glass retailers, and glass manufacturers, and can share the following:

***Berkeley-based businesses do not yet carry bird safe materials***

In February 2023, with the assistance of the City of Berkeley’s Office of Economic Development, staff contacted 13 Berkeley-based building material retailers to inquire into the availability of bird safe products. None of the 13 businesses carried bird safe products, and at least three businesses had not heard of bird safe options for window products. This mirrors research done by a member of the Design Review Committee, who contacted three local residential window suppliers (Ashby Lumber, Associated Building Supply and Glass Concepts) and a territory manager for BMD, a distributor of Marvin windows. None of the local suppliers had experience selling bird safe materials because of the added cost, and most of them had experiences with clients choosing not to use bird safe materials because of cost.

***Bird safe window costs vary***

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. Additionally, within the market for bird safe materials, some treatments cost less than others. The broad consensus from staff research is that bird safe windows do cost more than standard windows. The table below provides an order-of-magnitude comparison of standard windows and windows that would comply with the proposed ordinance:

Window Type	Cost (Price Range Per Square Foot)
Standard	\$12 - \$15
Fritted	\$15 - \$20
Etched	\$25 - \$30
Ultra Violet (UV)	\$35 - 40

It should be noted that California’s Title 24 Building Efficiency Code includes environmental requirements for windows that may not be met by all bird safe products. In addition, some window treatments such as Low-E windows<sup>6</sup> include a coating on the same window surface where fritting is commonly installed. As a result, costlier custom windows may be required to utilize both Low-E and bird safe elements.

***Window film and tape offer less expensive options, with caveats.***

ABC’s *Glass Collisions Products and Solutions Database* includes a variety of tapes, films and other products that are adhered to standard windows. These solutions cost less than specialized windows and are widely available, and can be delivered within days. For example, SOLYX Bird Safety Window Film costs approximately \$6 per square foot, and –at the time of staff research—can be delivered in about a week. However, the effectiveness and longevity of a tape or film depends on the quality of the installation and its maintenance. There is also the possibility that utilizing a tape or film may void or limit a window’s underlying warranty. Finally, while utilizing window film and tape listed in ABC’s database would comply with the ordinance, they are not considered long-term solutions, as they can be removed.

***Limited selection of bird safe materials may affect design options.***

While there are a number of bird safe materials on the market, the variety of materials is smaller than the market for conventional window products. A reduction in the variety of usable materials and products could therefore reduce the available architectural design options. However, when asked about this possibility, the Design Review Committee did not express concerns about this issue.

**Enforcement**

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<sup>6</sup> Low-E is short for Low-Emissivity or Low-Emittance. Low-E glass contains a microscopic coating that makes a window more thermally efficient.



The ordinance would only apply to projects that require a building permit. Replacing broken windows or individual window panes are considered repairs and do not require a building permit. For example, an existing window broken by an errant baseball would not be subject to the ordinance.

Project plans would be required to include a stamp from the project applicant attesting that the project would comply with the ordinance, and the window schedule for proposed projects would need to indicate the transparent materials subject to the ordinance and the compliance path being selected for each applicable material.

Land Use Planning and Building and Safety staff have limited ability to specifically enforce the ordinance on a project-by-project basis. For example, if a project utilized compliance path 2 (*Patterned Glazing Treatments*, above), Planning or Building staff would not measure the dots, lines or other patterns on each pane of glass after installation to confirm compliance. Compliance with the ordinance, as attested to on the building permit plans, would be an approval requirement, but detailed enforcement, beyond a general confirmation that compliant materials are present, would be on a complaint basis. An individual who suspects that a window or other material is not in compliance with the ordinance would register a code enforcement complaint, which would be investigated and resolved by staff.

### **Public Information Documents**

Upon adoption of the proposed Ordinance, staff will prepare a public information document to explain the Bird Safe requirements and its purpose in common language, and provide guidance to project applicants as to where to obtain compliant materials.

While ABC's Database includes more than 150 rated materials, it does not provide information about where to purchase items or whether they are available in Berkeley or the Greater Bay Area. The public information document would include purchasing options for specific products included in the ABC Database.

### **BACKGROUND**

At its meeting on March 2, 2022 the Planning Commission received a report and presentation on the referral from CEAC, the studied effects of built environments on bird populations, a brief discussion of how Berkeley's particular geography relates to bird populations, and a review of existing regulatory efforts in Bay Area cities regarding bird safety (**Attachment 3**). Staff then presented a draft proposal and received feedback from the Design Review Committee at its September 15, 2022 meeting. At its meeting of October 19, 2022 the Planning Commission received an additional report with a more specific set of policy questions, held a discussion, and established a Subcommittee (**Attachment 4**).

At its meeting on March 1, 2023, the Planning Commission held a public hearing to consider a proposed Bird Safe Requirements Ordinance developed by staff that was informed by feedback from both the Planning Commission, the Planning Commission Subcommittee, and the Design Review Committee (**Attachment 5**). Further information

on the details of the March 1, 2023 meeting are discussed below under “Alternative Actions Considered.”

### ENVIRONMENTAL SUSTAINABILITY AND CLIMATE IMPACTS

The purpose of the ordinance is to reduce bird mortality from windows and other transparent buildings or building features known to increase the risk of bird collisions. As the proposed ordinance does not require the replacement of existing windows with bird safe materials, current bird strike risk may not necessarily be reduced through the ordinance, but the inclusion of bird safe materials in future development and major rehabilitations would reduce bird mortality compared to a build-out scenario that only included standard windows. In addition to the benefits to birds themselves, reducing premature bird mortality would contribute to sustaining local biodiversity.

*Environmental Determination.* California Public Resource Code Section 21065 defines a “project” under CEQA as “an activity which may cause either a direct physical change in the environment, or a reasonably foreseeable indirect physical change in the environment.” The proposed ordinance only includes requirements for the types of windows or other transparent materials that must be included in proposed projects. The proposed ordinance does not consist of a discretionary action that would permit or cause any direct or indirect change in the environment. The proposed ordinance is therefore not a project under CEQA, and further environmental review is not required.

### RATIONALE FOR RECOMMENDATION

There are currently no bird safety measures required for newly constructed or renovated buildings in Berkeley. **Attachment 6**, a memo from the Planning Commission, details its rationale for recommending the proposed ordinance.

### ALTERNATIVE ACTIONS CONSIDERED

At its meeting on March 1, 2023, the Planning Commission held a public hearing to consider a proposed Bird Safe Building ordinance developed by staff that was informed by feedback from both the Planning Commission, the Planning Commission Subcommittee, and the Design Review Committee (**Attachment 5**). The ordinance staff recommended at the March 1 Planning Commission meeting was based on prior Commission advice to propose requirements based on window size (not project size or type), to base the regulations on others adopted regionally, and to differentiate between larger and smaller projects. The ordinance recommended by the Planning Commission (**Attachment 1**) differs from the ordinance recommended by staff at the March 1 Planning Commission meeting. **Attachment 7** is a redlined version of the ordinance recommended by staff at the March 1 Planning Commission meeting, which includes the amendments made by the Planning Commission.

### Applicability

The ordinance recommended by staff at the March 1 Planning Commission meeting, as well as the existing regulations in both Emeryville and Alameda, included a provision that bird safe requirements only apply to transparent materials that are 12 square feet or larger. More recently-adopted ordinances do not include exemptions based on window

size, including those in New York City, Mountain View, and Evanston, Illinois. Public comment at the March 2023 meeting emphasized that windows of any size could pose a hazard and that the size threshold included in staff's proposed ordinance would exempt many windows on new projects. As a result, the Planning Commission unanimously recommended an expansion of the applicability of the ordinance to all windows and transparent surfaces.

### **Project Type**

Given concerns about the cost and availability of bird safe materials, the ordinance recommended by staff at the March 1 Planning Commission meeting limited bird safe requirements for smaller residential projects only to windows on facades where more than 50 percent of the surface area consisted of transparent glass. Initial feedback from the Planning Commission noted that even small projects with larger amounts of glass would likely have the budget to afford bird safe materials. The cities of Richmond and Alameda, as well as the CEAC's proposed ordinance, include the 50 percent threshold as an indication of particularly risky locations for bird collisions.

Based on public comment that this exemption may be too far-reaching, the Planning Commission revised this exemption to only apply to projects without a single façade that included windows on 30 percent or more of its surface area. Also, the Planning Commission limited the duration of the exemption, creating a phase-in for these projects of January 1, 2025.

### **Affordable Housing Exemption**

Consistent with the threshold adopted by the City Council for Transportation Demand Management requirements, the ordinance recommended by staff at the March 1 Planning Commission meeting included an exemption for residential projects that included 50 percent or more of their units as affordable. This exemption was introduced to avoid additional costs for the development of affordable housing. Public comment at the meeting noted that a significant number of anticipated projects (North Berkeley BART, for instance) could reach this affordable housing threshold and that a notable number of future buildings could thereby not include any bird safe materials. The Planning Commission recommendation instead limited the duration of the exemption, creating a phase-in for affordable projects of January 1, 2025.

### **Qualified Biologist**

The ordinance recommended by staff at the March 1 Planning Commission meeting included a compliance pathway that would permit a qualified biologist to indicate that a project's proposed construction methods and materials would reduce the risk of bird collision to an extent comparable to the other compliance paths. This compliance path was introduced to recognize that there may be an alternative method or technology that is not yet listed in the other compliance paths but could be equally effective. Cupertino

and Emeryville's ordinances include an explicit provision for certification by a qualified biologist. Alameda and Oakland, as well as CEAC's proposed ordinance, include provisions for alternative compliance paths that require the input of qualified biologists. However, public and Planning Commissioner comments expressed concern that such a compliance path could be exploited, due to the lack of standardized qualifications for biologists and the risk that an unethical biologist could be hired to certify a project that was in fact not bird safe. The Planning Commission recommendation therefore does not include this compliance path.

CONTACT PERSON

Justin Horner, Associate Planner, Planning and Development, 510-981-7476

Attachments:

- 1: Bird Safe Building Ordinance.
- 2: Adopted Bird Safe Ordinances – Comparison Table.
- 3: Planning Commission Report, March 2, 2022.
- 4: Planning Commission Report, October 19, 2022.
- 5: Planning Commission Report, March 1, 2023.
- 6: Planning Commission Memo, March 23, 2023.
- 7: Redlined Ordinance: Golden Gate Audubon's Recommendations to Staff Planning Commission Recommendation, dated March 1, 2023
- 8: Public Hearing Notice

ORDINANCE NO. -N.S.

BIRD SAFE BUILDING; ADDING BERKELEY MUNICIPAL CODE SECTION 23.304.150

BE IT ORDAINED by the Council of the City of Berkeley as follows:

Section 1. That the Berkeley Municipal Code is amended to add a new Section 23.304.150 to read as follows:

**23.304.150 Bird Safe Building.**

**A. Purpose.** The purpose of this section is to reduce bird mortality from windows and other transparent or reflective buildings or building features known to increase the risk of bird collisions.

**B. Applicability.**

1. *Applicability.* The bird safe building requirements apply to the following types of projects based on the primary land use when such projects require a building permit.

**Table 23.304-10. Bird Safe Building Requirement Applicability**

<b>Project Type</b>	<b>Applicable Building Location(s)</b>	<b>Supplemental Standards</b>
<b>Non-Residential</b>		
New Construction or Addition	All transparent or reflective material located between the ground and 100 ft. above grade.	
New or Replacement Transparent or Reflective Material on Existing Building	All transparent or reflective material located between the ground and 100 ft. above grade.	23.304.150(B)(2)(a), 23.304.150(B)(2)(b)
High-Risk Features	All High-Risk Features located at any grade.	23.304.150(B)(2)(a) 23.304.150(B)(2)(e)
<b>Residential or Mixed Use</b>		
New Construction or Addition, Building with 10,000 sq. ft. or more of gross floor area	All transparent or reflective material located between the ground and 100 ft. above grade.	23.304.150(B)(2)(d)
New Construction or Addition, Building with	All transparent or reflective material located between the	23.304.150(B)(2)(b), 23.304.150(B)(2)(d)

less than 10,000 sq. ft. of gross floor area	ground and 100 ft. above grade.	
New or Replacement Transparent or Reflective Material on Existing Building	All transparent or reflective material located between the ground and 100 ft. above grade.	23.304.150(B)(2)(a), 23.304.150(B)(2)(c), 23.304.150(B)(2)(d)
High-Risk Features	All High-Risk Features located at any grade.	23.304.150(B)(2)(a) 23.304.150(B)(2)(e)

2. *Phasing and Exemptions; Definitions.*

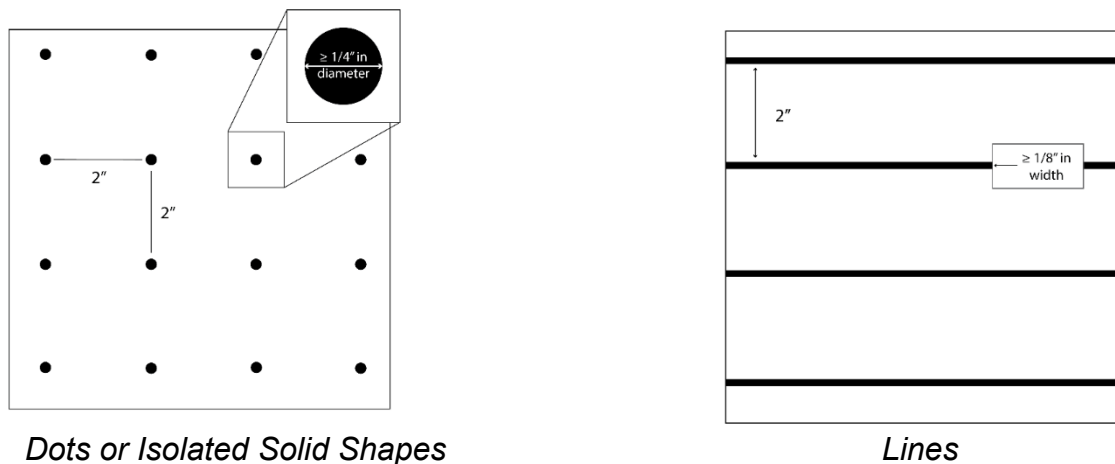
- a. *No Replacement.* The bird safe building requirements do not apply to existing windows or other transparent or reflective materials that are not proposed to be replaced.
- b. *Phase-In for Existing Non-Residential or New Smaller Residential Buildings with Lower Hazard Facades.* Buildings where every façade’s total square footage consists of less than 30 percent transparent or reflective material are exempt through January 1, 2025, except that High-Risk Features are not exempt. If one or more façade contains 30 percent or more transparent material in its total square footage, all transparent or reflective materials shall meet 23.304.150(C) (Bird Safe Requirements).
- c. *Phase-In for Existing Residential Buildings with Lower Hazard Facades.* Buildings where every façade’s total square footage consists of less than 30 percent transparent or reflective material are exempt through January 1, 2028, except that High-Risk Features as described in Table 1 – 23.304-10 are not exempt. If one or more façade contains 30 percent or more transparent material in its total square footage, all transparent or reflective materials shall meet 23.304.150(C) (Bird Safe Requirements)
- d. *Phase-In for Affordable Housing.* Residential projects, including the residential portion of mixed-use projects, where greater than 50 percent of the residential unit floor area are subject to recorded affordability restrictions, are exempt from the provisions of this section until January 1, 2025, except that High-Risk Features are not exempt.

- e. *High-Risk Features Defined.* “High-Risk Features” shall be defined as the following transparent or reflective building components that are particularly susceptible to bird-glass collisions: Railings; Awnings; Windbreak/windscreen panels; Acoustic barriers; Skywalks; Greenhouses; Glass walls; Rooftop appurtenances; Balconies; and Exterior decorative panels or signage.

**C. Bird Safe Requirements.** Any regulated transparent or reflective material must meet at least one of the following conditions:

1. *Threat Factor Rating.* A product with an American Bird Conservancy Threat Factor Rating of 30 or less.
2. *Patterned Glazing Treatment.* Panes with patterns that are etched, fritted, stenciled, silk-screened, or otherwise permanently incorporated into the transparent material. If the pattern utilizes dots or other isolated solid shapes, each dot or shape must be at least a ¼ inch in diameter and be no more than 2 inches apart in any direction (see Figure 23.304-2, left). If the pattern utilizes lines, they must be at least ⅛ inch in width and spaced no more than 2 inches apart (see Figure 23.304-2, left).

**Figure 23.304-2 Patterned Glazing Treatment Requirements**



3. *External Screens, Shutters, or Shading Devices.* Panes with exterior screens, shutters or shading devices installed permanently over windows, structures, or building features such that there is no gap larger than 9 inches in one dimension. Building integrated treatments include, but are not limited to,

metal screens, shutters, fixed solar shading such as louvres, and exterior insect or solar screens.

Section 2. Copies of this Ordinance shall be posted for two days prior to adoption in the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way. Within 15 days of adoption, copies of this Ordinance shall be filed at each branch of the Berkeley Public Library and the title shall be published in a newspaper of general circulation.



ATTACHMENT 2 Bird Safe Comparison Table

	Planning Commission Recommendation to City Council (6/6/2023)	Planning Staff Proposal (3/1/2023 PC)	GG Audubon Society (2/24/2023)	Evanston, IL (2022)	Mountain View, CA (2022)	Cupertino, CA (2021)	New York, NY (2020)	Emeryville, CA (2020)	CEAC Model Ordinance (2019)	Alameda, CA (2018)	Richmond, CA (2016)	Oakland, CA (2013)	San Francisco, CA (2011)
<b>Regulatory Document</b>	Zoning Code	Zoning Code	<a href="#">Zoning Code</a>	<a href="#">Zoning Code</a>	<a href="#">Building Code</a>	<a href="#">Zoning Code</a>	<a href="#">Building Code Admin Code</a>	<a href="#">Zoning Code</a>	N/A	<a href="#">Zoning Code</a>	<a href="#">Zoning Code</a>	<a href="#">Standard Condition of Approval</a>	<a href="#">Planning Code</a>
<b>Location</b>	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Citywide	Adjacent to water or park ≥ 1 acre	Within 300 ft of Urban Bird Refuge <sup>1</sup>
<b>Building Height Regulated</b>	0-100 ft	0-100 ft	0-100 ft	<ul style="list-style-type: none"> <li>0-60 ft</li> <li>16 ft above green roof, garden</li> </ul>	Any height <sup>2</sup>	Any height	<ul style="list-style-type: none"> <li>0-75 ft</li> <li>12 ft above green roof</li> </ul>	Any height	2 stories or greater	35 ft or greater <sup>3</sup>	<ul style="list-style-type: none"> <li>0-60 ft</li> <li>60 ft above green roof</li> </ul>	0-60 ft	0-60 ft
<b>Window Size</b>	100% of windows	100% of continuous transparent material 12 sf or larger	100% of windows	100% of windows	100% of windows	90% of windows (0-60 ft) or 95% of windows (above 60 ft)	100% of windows	90% of windows 12 sf or larger	90% of windows 8 sf or larger	90% of windows 12 sf or larger	90% of windows 24 sf or larger	90% of windows	90% of windows
<b>High-Risk Features</b>	All features (any height)	≥ 24 sf (any height)	All features (any height)	All features (any height)	All features (any height)	N/A	All features (any height)	All features (any height)	≥ 24 sf (any height)	N/A	≥ 24 sf (any height)	N/A	≥ 24 sf (any height)
<b>Exemptions</b>	None <sup>4</sup>	> 50% affordable	>75% affordable	<ul style="list-style-type: none"> <li>Detached one/two-family du</li> <li>Townhomes/ Residential bldgs less than 3 stories</li> </ul>	<ul style="list-style-type: none"> <li>Residential-only use</li> <li>Buildings &lt;10,000 sf</li> </ul>	<ul style="list-style-type: none"> <li>Historic bldgs</li> <li>Ground floor retail ≥ 15 ft height</li> <li>Residential in R1 not in <a href="#">Bird-Sensitive Areas</a></li> </ul>	10 sf of every 100 sf of glass	None	Historic bldgs 1-story bldg Ground floor commercial storefront Building with façades <50% glass	Historic bldgs Ground floor commercial storefront Buildings with façades <50% glass	Historic bldgs Buildings ≤10,000 sf Residential <45 ft height with façades <50% glass	None	Residential <45 ft height with façades <50% glass
<b>COMPLIANCE PATHS</b>													
<b>Threat Factor Rating</b>	≥ 30	≥ 30	≥ 30	<ul style="list-style-type: none"> <li>≥ 15 (0-60 ft)</li> <li>≥ 30 (above 60 ft and high-risk features)</li> </ul>	Planning discretion	Planning discretion	≥ 25	N/A	N/A	N/A	N/A	N/A	N/A
<b>Patterned Glazing</b>	Yes	Yes	Yes	No	Planning discretion	Planning discretion	No	Yes	Yes	Yes	Yes	Yes	Yes
<b>Exterior Devices</b>	Yes	Yes	Yes	Yes	Planning discretion	Planning discretion	No	Yes	Yes	Yes	Yes	Yes	Yes
<b>Alternatives</b>	None	Qualified Biologist	None	None	Planning discretion	Qualified Biologist	None	Qualified Biologist	Alternative Compliance Plan	Alternative Compliance Plan	None	Bird Collision Reduction Plan	Zoning Admin. may waive or alter

<sup>1</sup> Urban Bird Refuge is an open space two acres or larger dominated by vegetation, including vegetated landscaping, forest, meadows, grassland, or wetlands, or open water.

<sup>2</sup> Current maximum building height allowed in Mountain View is 70 ft.

<sup>3</sup> Current maximum building height allowed in Alameda is 60 ft.

<sup>4</sup> January 1, 2025 phase in for greater than 50% affordable projects, existing non-residential or new smaller residential buildings with lower hazard facades. January 1, 2028 phase in for existing residential buildings with lower hazard facades.



Development Department  
Division

## STAFF REPORT

DATE: March 2, 2022  
TO: Members of the Planning Commission  
FROM: Zoe Covello, Assistant Planner  
SUBJECT: Bird Safe Berkeley Requirements Referral

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### SUMMARY

On November 12, 2019, the Community Environmental Advisory Commission presented an action item to the City Council, recommending that the City of Berkeley amend the Berkeley Municipal Code (BMC) to include a new Chapter establishing bird safety requirements for new construction and significant renovations, as well as a new Chapter establishing a Dark Skies Ordinance. City Council unanimously adopted the Bird Safe Berkeley Requirements Referral (see Attachment 1) requesting the City Manager develop a response. This report provides background on bird safety requirements and recommends next steps for Planning Commission's consideration.

### BACKGROUND

Birds do not have the same depth perception or contrast sensitivity as humans; as such they cannot see glass. And at night, which is when most birds migrate, guided by magnetic sensors in their retinas that pick up on red and warm-white light, light distracts and disorients them, often leading to collisions.<sup>1</sup> It's estimated that between one hundred million and one billion birds die every year in collisions with manmade structures.<sup>2</sup> According to the Audubon Society, bird collisions with windows are a leading cause of human-induced bird deaths in the United States, second only to outdoor house cats.

#### Why is it relevant to Berkeley?

Berkeley is located within the Pacific Flyway, a major migratory route for birds. When birds encounter unfamiliar urban areas along the migratory path, they are at particular risk for collisions and death. The City is also adjacent to the San Francisco Bay, one of North America's most ecologically important estuaries and an international biodiversity hotspot because of the large number of birds, animals, and plants found there, many of which are found nowhere else. The region is also recognized as a site of "Hemispheric Importance" for shorebirds by the Western Hemisphere Shorebird Reserve Network.<sup>3</sup> Alameda County has recorded 407 species of resident and migratory bird species,

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<sup>1</sup> <https://www.audubon.org/news/building-collisions-are-greater-danger-some-birds-others>

<sup>2</sup> [http://nas-national-prod.s3.amazonaws.com/documents/loss\\_et\\_al\\_bird-building\\_collisions\\_condor\\_2014.pdf](http://nas-national-prod.s3.amazonaws.com/documents/loss_et_al_bird-building_collisions_condor_2014.pdf)

<sup>3</sup> <https://ca.audubon.org/conservation/conservation/seas-shores/san-francisco-bay>

including Least Terns, Ridgway's Rails, and a variety of other uniquely local and/or threatened species.

As pointed out in the CEAC report, new buildings can be designed to reduce bird deaths from collisions without compromising cost or aesthetics. Many compliance methods can be incorporated into design or construction with no additional cost or effort for architects or engineers, and in some cases, bird safe measures help achieve other desirable environmental goals -- like improved building energy efficiency.

#### Existing bird safety regulations in Berkeley

There are currently no bird safety measures required for newly constructed or renovated buildings in Berkeley. There are some zoning regulations providing guidance or limitations on outdoor lighting (see BMC [23.304.100\(E\)](#) [Site Features in Residential Districts], BMC [23.304.130\(C\)\(2\)](#) [Non-residential Districts Abutting a Residential District], as well as the City of Berkeley's Downtown Area Plan and the Southside zoning regulations (BMC [23.204.100\(B\)\(5\)\(c\)\(vii\)](#))), but there is no citywide policy preventing excessive light pollution.

#### What do bird safe requirements look like?

In an effort to mitigate these deaths, municipalities around the country have started adopting bird safety requirements – which primarily take the form of requiring bird safe glass and reducing light pollution at night.

Glass and façade treatments are the most common methods of prevention, and include solutions such as fritted and frosted glass, angled glass, ultra-violet glass, and film and art treatment of glass. The “2 by 4 rule” - patterns of 1/4-inch dots or stripes 4 inches apart horizontally or 1/8-inch dots or stripes 2 inches apart vertically - and other patterns that meet that rule, were found to greatly reduce bird-glass collisions.

Other primary methods of prevention include, but are not limited to:

- Installing exterior screens or netting
- Reducing large areas of transparent or reflective glass
- Keeping curtains or shades drawn
- Turning non-emergency lighting off at night (particularly during migration in February-May and August-November)<sup>4</sup>
- Putting lights on timers or photo-sensitive switches
- Cleaning buildings in the daytime
- Locating greenery away from clear glass
- Site design measures like fine-grained ventilation grates and gardens without mirrors

#### How are municipalities implementing requirements?

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<sup>4</sup> <https://www.bloomberg.com/news/features/2022-01-04/how-to-design-buildings-to-prevent-bird-crashes>

There are a variety of ways these regulations can be implemented. The referral suggests creating a new chapter in the Zoning Ordinance. Here are some other options, as well as the pros and cons of each option, as identified by the City of Emeryville:

- CEQA Review – The city could develop and apply general standards to mitigate potential impacts on migratory wildlife, which is part of the standard CEQA checklist for projects requiring environmental review.
- Project Conditions of Approval – Standard Conditions of Approval for projects could be amended to include new enforceable standards for bird safe measures for applicable projects.
- Design Guidelines – The Design Guidelines could be modified to include a section that would include standards that apply to applicable projects during Design Review. This would provide some flexibility in enforcement, as guidelines are not regulations and projects that bypass discretion are not subject to review or compliance.
- Planning Regulations – The Berkeley Municipal code could be amended to include new standards (as proposed by CEAC), providing consistent application to all projects.

Building Regulations – The Berkeley Municipal Code could be amended to include new standards under a local building code amendment, which would apply to all projects requiring a building permit.

### Existing ordinances in Bay Area cities

San Francisco adopted the first bird-safe building ordinance in the United States in 2011, requiring glass façade treatment be applied to the lower 60 feet of buildings within a 300-foot buffer of two-acre open spaces. Oakland followed San Francisco, adopting measures applicable to buildings adjacent to one-acre open spaces. Similarly, Richmond adopted an ordinance in 2016 requiring the treatment of the lower 60 feet of glass adjacent to one-acre open spaces and panes with areas of 24 feet or more.

Alameda has also developed a bird safety ordinance, adopted in 2018, which applies to new construction and window replacements, as well as lighting. Both Emeryville's 2020 building standards ordinance and CEAC's recommended amendments to the zoning ordinances are modeled after Alameda's. A table detailing bird safe requirements in Alameda, Emeryville, Oakland, and CEAC's recommended ordinance is attached (see Attachment 2).

## **DISCUSSION**

The referral includes two draft ordinances for Planning Commission's consideration. Staff proposes the following approach to this referral:

1. *Identify Implementation Opportunities and Challenges:* As stated above, draft language in the referral is similar to ordinances adopted in Emeryville and Alameda a few years ago. Staff will reach out to planning staff in Emeryville and

Alameda regarding lessons learned from ordinance implementation and suggest any necessary modifications.

2. *Confirm Consistency with California Building Code:* Since California Building Code is amended on a three-year cycle, staff will check with the Berkeley Building Official to ensure there are no conflicts in proposed zoning language and local or California Building Code.
3. *Confirm Consistency with Design Guidelines:* The Design Review Committee (DRC) has reviewed this referral and expressed an interest in seeing it move forward. Staff will work with the Secretary of the DRC to ensure the Committee's comments are addressed and that the Committee is informed of the referrals' progress as it makes its way through the public review.
4. *Redraft Zoning Language According to the BZO Style Guide:* The Baseline Zoning Ordinance or BZO – now referred to as the Zoning Ordinance – included a style guide. Since this referral predated adoption of the BZO, the draft ordinances will need to be modified to follow the style guide.
5. Finally, staff requests that the Commissioners consider the following questions:
  - Does the Commission suggest modifications to staff's proposed approach?
  - Should the standards apply citywide, or near large open spaces with vegetation and/or water?
  - Should the standards apply to the lower 60 feet of buildings or to the entire building?
  - Does the Commission have any other suggestions to inform the drafting of bird safe building standards in Berkeley?

After receiving this information, staff will draft a new ordinance or ordinances that follow the BZO style guide. This draft ordinance will then be shared with Planning Commission for consideration and development of a recommendation to City Council.

## **ATTACHMENTS**

1. CEAC Report / City Council Referral
2. Local Ordinance Comparison Table



Development Department  
Division

## STAFF REPORT

DATE: October 19, 2022  
TO: Members of the Planning Commission  
FROM: Justin Horner, Associate Planner  
SUBJECT: Bird Safe Berkeley Requirements Referral

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### SUMMARY

At their meeting on March 2, 2022, the Planning Commission, in response to a referral from the Community Environmental Advisory Commission (CEAC) and City Council, provided direction for amendments to the Berkeley Municipal Code (BMC) establishing bird safety requirements for new construction and significant renovations. This report presents a more specific set of policy questions for the Planning Commission's consideration, based on staff's additional research and feedback from the Design Review Committee (DRC) and Golden Gate Audubon.

The policy questions pertain to:

- What types of projects should be required to comply?
- For projects that are subject to the requirements, how much glazing should be required to be bird safe?
- For the purposes of compliance, what materials are considered bird safe?

Staff seeks Planning Commission's direction in order to return to the Commission for a public hearing on December 7, 2022 with specific Zoning Ordinance amendments.

### BACKGROUND

At their meeting on March 2, 2022, the Planning Commission received a report and presentation on the referral from the CEAC, the studied effects of built environments on bird populations, a brief discussion of how Berkeley's particular geography relates to bird populations, and a review of existing regulatory efforts in Bay Area cities regarding bird safety (*Attachment 1*).

After hearing public comment, the Planning Commission provided direction to staff to return with bird safety regulations that are:

- Included in the Berkeley Municipal Code/Zoning Ordinance<sup>1</sup>;
- Applicable to new buildings and major renovations *citywide*; and

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<sup>1</sup> Other options considered and dismissed included adopting bird safe regulations through CEQA review mitigation measures, project conditions of approval, design guidelines, or local building code.

- Based on the most up-to-date science with respect to birds and the built environment.

Accordingly, Commissioners asked staff to analyze recently-adopted bird safe regulations from New York City and Mountain View, and to consult with the Golden Gate Audubon Society.

On September 15, 2022, staff provided an informational presentation on proposed bird safe regulations to the DRC, which provided the following feedback:

- **Costs and feasibility for smaller residential projects.** The DRC expressed concern about the cost of bird safe glass for single family homeowners and builders of smaller residential projects (e.g. 2-4 units) . Committee members also questioned whether bird safe glass was sufficiently available for smaller residential projects. One Committee member contacted three local window retailers, none of whom had experience with requests for bird safe glass. It was noted that bird safe glass could potentially double the cost of a glass order for a smaller project.
- **Phased approach to bird safe requirements.** Given concerns about the availability and cost of bird safe glass for smaller residential projects, DRC members recommended phasing in bird safe requirements. New construction of commercial projects and larger-scale residential and mixed-use projects would be subject to bird safe requirements, while new smaller-scale residential and residential rehabilitation projects would be covered at a later date as the costs and benefits become clearer. The DRC noted that larger projects would be in a better position to absorb any increase in per window cost because the project as a whole is better financed. In addition, larger window orders that would come from larger projects may result in less per-unit costs.
- **Tiered approach to bird safe requirements.** DRC members suggested that bird safe requirements could be tiered to include more features as project size increases. i.e. larger projects could be subject to more comprehensive requirements while smaller residential projects or rehabs could be subject to fewer requirements. For instance, larger projects could be required to use bird safe glass throughout the project while smaller projects could be permitted to use alternative methods or use them on specific portions of the project.
- **Point-of-Sale Requirement:** Existing residences could be required to comply with bird safe requirements at point of sale.
- **Historical Landmarks:** DRC members supported provisions that would require a minimally intrusive compliance option—or exemption—for designated historical landmarks.
- **Public Education:** DRC members recommended a public information campaign to introduce residents to the concept of bird safe building strategies and to raise awareness of future regulations. This would not only include bird safe glass, but lighting, landscaping and other project design elements that encourage bird

safety. Golden Gate Audubon is exploring how they could coordinate such an effort.

Given Planning Commission’s direction in March 2022, and feedback from the DRC, community members, and Golden Gate Audubon, the development of a bird safe ordinance will be informed by answers to the following questions:

- What types of projects should be required to comply?
- For projects that are subject to the requirements, how much glazing should be required to be bird safe?
- For the purposes of compliance, what materials are considered bird safe?

To provide parameters for the Planning Commission’s discussion, Table 1 summarizes the Bird Safety Ordinance recommended by the CEAC and City Council in its referral and the American Bird Conservancy’s (ABC) Model Bird Friendly Ordinance.<sup>2</sup> CEAC’s suggested ordinance was presented in 2019 and was based on the City of Alameda’s regulations. ABC’s Model Bird Friendly Ordinance constitutes a more expansive policy approach which it characterizes as “the leading edge of creating a bird-friendly bird environment.” That said, ABC itself suggests that jurisdictions may feel the need to soften some of its provisions to meet local conditions.

*Table 1. Bird Safe Ordinance Summaries*

	<b>CEAC’s Proposed Ordinance</b>	<b>ABC’s Model Ordinance</b>
<b>What types of projects are covered?</b>	<ul style="list-style-type: none"> <li>• For new construction, windows on a façade of a building with 2 or more stories where glass constitutes 50% or more of the façade’s area.</li> <li>• Replacement of existing windows on a façade of a building with 2 or more stories where glass constitutes 50% or more of the façade’s area.</li> <li>• Any new or replaced glass structure (e.g. greenhouse) with any transparent walls 24 sq ft or more in size</li> </ul>	<ul style="list-style-type: none"> <li>• 100% of all new projects</li> <li>• Replacement of at least 50% of existing glass on existing structures</li> <li>• Any new glass on an existing building</li> <li>• All high-risk building features.<sup>3</sup></li> </ul>
<b>Exemptions</b>	<ul style="list-style-type: none"> <li>• Replacement of existing glass on historic structures</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>

<sup>2</sup> <https://abcbirds.org/wp-content/uploads/2020/12/American-Bird-Conservancy-Model-Bird-Friendly-Building-Ordinance.docx>

<sup>3</sup> “High-risk building features” include skyways/walkways and building connectors, transparent outside building corners, areas with parallel glass, courtyards, atria and areas above green roofs.



	<ul style="list-style-type: none"> <li>• Glazing on ground floor of commercial storefronts directly fronting a public street, alley or sidewalk</li> <li>• Windows that are smaller than 2ft x 4ft (8 sq ft)</li> </ul>	
<b>How much glazing is to be bird safe?</b>	<ul style="list-style-type: none"> <li>• 90% of eligible glazing on any regulated façade or free-standing structure</li> </ul>	<ul style="list-style-type: none"> <li>• 100% of glazing within 100 ft from grade</li> <li>• 100% of glazing within three floors adjacent to or above a green roof</li> </ul>
<b>What materials are considered bird safe?</b>	<ul style="list-style-type: none"> <li>• Opaque glass or film</li> <li>• Paneled glass</li> <li>• Glass covered with patterns</li> <li>• UV reflective glass</li> <li>• External screens</li> <li>• Light colored blinds or curtains</li> <li>• Other treatments approved by the Planning Director</li> </ul>	<ul style="list-style-type: none"> <li>• Products with an ABC Threat Factor Rating of 30 or less</li> <li>• Glass with obstructions no larger than 12” in any direction</li> <li>• Untinted glass with less than 15% reflectance and contains visual markers</li> </ul>

**What types of projects should be covered?**

Table 1. Bird Safe Ordinance Summaries provides parameters for the types of projects that could be covered by a bird safe ordinance. While ABC’s model ordinance covers nearly all glazing on all new buildings, CEAC’s proposed ordinance applies only to buildings of 2 or more stories, and only to each building façade that meets a minimum requirement, and then only to windows on that façade that meet minimum size requirements.

As noted above, the DRC was concerned about the feasibility of requiring bird safe glass for single family homes and smaller residential developments. An exemption for projects of only one story could partially address that concern, but it is likely, particularly with proposed implementation programs in the Housing Element Update to encourage residential development including Middle Housing, that a large proportion of future smaller-scale residential development will be at least two stories.

The Planning Commission may want to consider exempting projects by type, as opposed to, or in addition to, by size. For example, the City of Evanston’s (Illinois) recent Bird Friendly Building Design Ordinance<sup>4</sup> exempts detached one- and two-family dwelling and multiple single-family dwellings (townhouses) altogether, as well as residential buildings of three stories or less.

<sup>4</sup> <https://www.cityofevanston.org/home/showpublisheddocument/74672/637993547035470000>

It should be noted that a not insignificant proportion of bird strikes on buildings occur at lower levels, as strikes are common at buildings adjacent to bird habitat, such as street trees and bushes. At the DRC meeting, Berkeley Parks, Recreation and Waterfront Commissioner Erin Diehm noted that approximately 44% of collisions occur at 1-2 story buildings, while 56% occur at 3-11 stories.

An additional option is to limit the applicability of the bird safe requirements to glazing of a certain size, regardless of, or in addition to, overall provisions regarding project size. CEAC's ordinance, for example, applies bird safe requirements only to glazing that is larger than 2 ft by 4 ft, or 8 sq ft. At the DRC meeting, testimony from Golden Gate Audubon's Executive Director identified 1 square meter, or 3.3 ft by 3.3 ft (roughly 11 sq ft), as a common size threshold for glazing.

*Exemption for Historic Resources.* An exemption from, or reduction in, bird safe requirements was included in CEAC's ordinance and noted by the DRC. The Planning Commission may consider a similar exemption, or recommend less stringent requirements for the replacement of windows on such structures. CEAC's ordinance distinguished between replacing existing windows on an historic structure and new construction associated with an historic structure.

*Phasing In Regulations.* A number of DRC members recommended only subjecting new commercial and larger-scale residential projects to bird safe regulations in the short term, while eventually phasing-in smaller-scale residential projects. This would provide time for Berkeley homeowners to learn about and prepare for the introduction of bird safe requirements, while also providing time for the bird safe glass market to ramp up to better serve smaller-scale users. Some members suggested including a specific phase-in date in the ordinance, for predictability and to aid in moving the bird safe window market, while other members suggested expanding the applicability of the ordinance through future amendments.

### **How much glazing should be bird safe?**

ABC's Model Bird Safety Ordinance is "based on a 100/100/100 framework: 100% of all glass and other building materials should be bird friendly in the first 100 feet of 100% of buildings." Many existing ordinances, as well as CEAC's proposed ordinance, however, require 90% of eligible glazing to be bird safe. It is not uncommon to exempt some percentage of otherwise eligible glass (the Leadership in Energy and Environmental Design (LEED) Bird Collision Deterrence credit, for example, exempts up to 5% of eligible glass). The primary reason for these small exemptions is to address concerns some retailers have of the impact of bird safe glass on the look and feel of store frontages. A 10% exemption of eligible glass on a ten-story building, for instance, could exempt the entire ground floor. There may also be other, as yet unforeseen reasons to create some flexibility in requirements.

An additional threshold relates to the height at which bird safe glass is required. ABC's Model Bird Safety Ordinance calls for bird safe glass in the first 100 feet above grade and three stories above or adjacent to any green roof. The City of Evanston's

ordinance requires a more stringent safety standard in the first 60 feet above grade and a lower standard for building surfaces above 60 feet. LEED's credit distinguishes between the first 40 feet above grade, and building surfaces between 40 feet and 100 feet above grade.

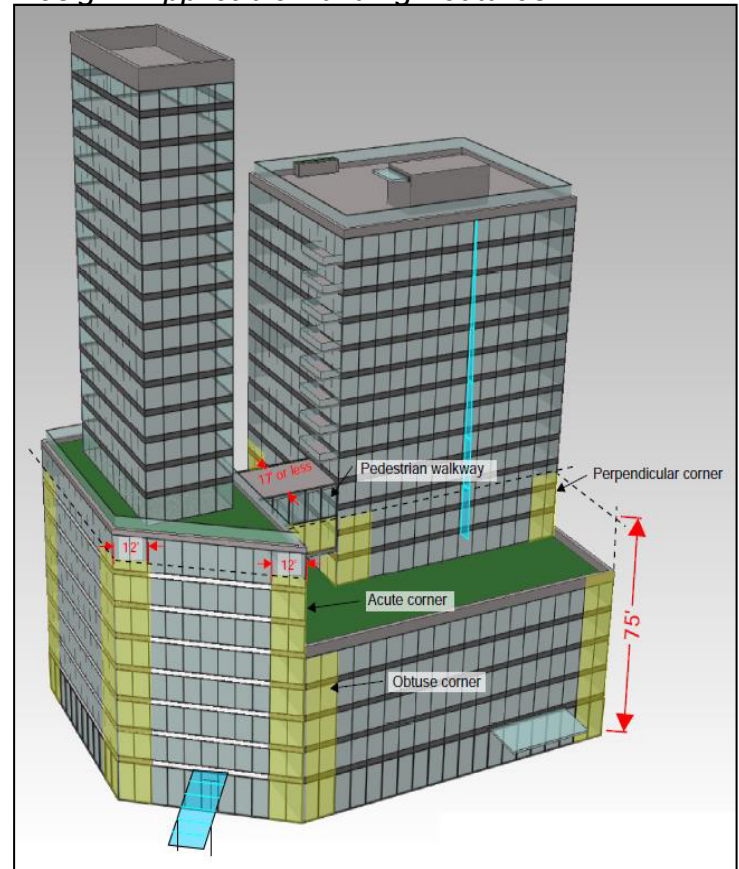
It is also common for ordinances to require bird safe glass on surfaces or building features regardless of their distance from grade. For example, glazing above or adjacent to green roofs in new buildings are often required to be bird safe, as are building corners and other potential "fly through" features.

Common building features that are subject to bird safe requirements include:

- Elevated pedestrian building connections, such as skyways or skybridges;
- Parallel glass walls;
- Glass atriums; and
- Architectural projections, such as railings, balconies, louvers, or noise or wind barriers.

New York City's Bird Friendly Building Design Guidance Document<sup>5</sup> includes a figure (Figure 1) which illustrates how their regulations apply to specific building features. However, this may be difficult to enforce; New York City does not retroactively require retrofitting of windows adjacent to newly—or subsequently—created applicable building features.

*Figure 1. New York City Bird Friendly Building Design - Applicable Building Features*

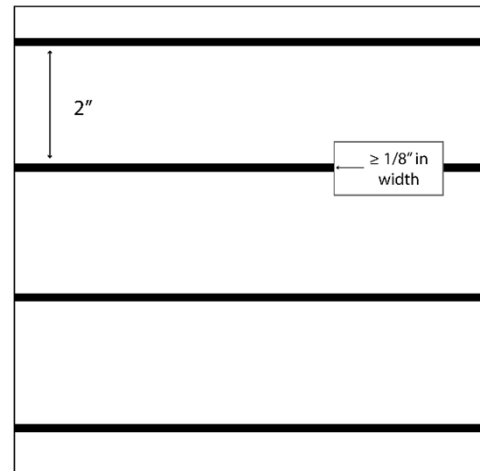
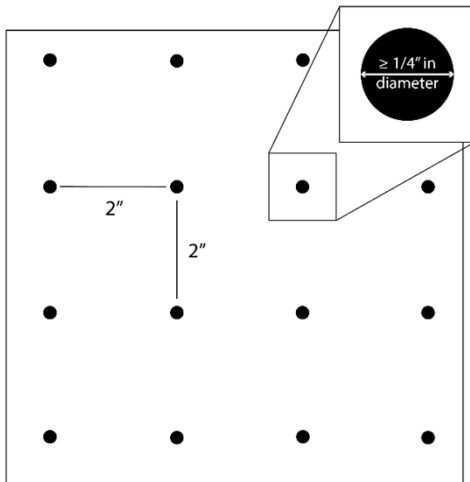
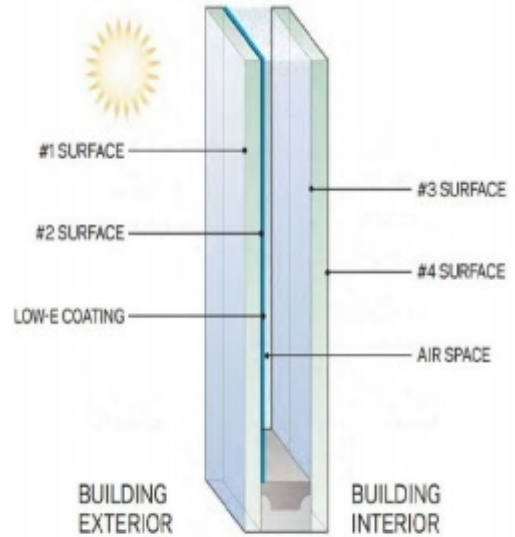


### What materials are considered bird safe?

The American Bird Conservancy's Model Ordinance provides the following definition for bird safe glass.

<sup>5</sup> [www1.nyc.gov/assets/buildings/bldgs\\_bulletins/bird\\_friendly\\_guidance\\_document.pdf](http://www1.nyc.gov/assets/buildings/bldgs_bulletins/bird_friendly_guidance_document.pdf)

- A product with an American Bird Conservancy Material Threat Factor Rating of 30 or less<sup>6</sup>;
- Glass with an exterior surface (surface 1, right) obstructed and effectively covered by building-integrated structures that do not have gaps larger than 12 in. in any dimension, including non-glass double-skin facades, metal screens, fixed solar shading, exterior insect or solar screens, and other features as determined by the Zoning Officer that meet these conditions; or
- Un-tinted glass with an outer total reflectance of no more than 15% that contains a pattern of visual markers that are on the exterior surface (surface 1, right) or the interior surface of a pane of glass on the building exterior (surface 2, right) that conforms to the following rules:
  1. Dots or other isolated solid shapes that are at least a 1/4" in diameter and are no more than 2' apart in any direction (below, left); or
  2. Lines that are at least 1/8" in width and spaced no more than 2" apart (below, right).



<sup>6</sup> ABC's Material Threat Factor (TF) rating system tests, assesses and classifies materials on a scale of 0 to 100 to provide a relative measure of birds' ability to see and avoid patterned glass and other materials. The lower the TF, the more effective the material will be at reducing collisions. For more information, see ABC's Threat Factor page: <https://tinyurl.com/4k2v2stb>. For ABC's regularly updated database of materials, which include TF ratings, see: <https://abcbirds.org/glass-collisions/products-database/>.

ABC's Threat Factor Rating is used by the City of Evanston and LEED's Bird Collision Deterrence Credit, and CEAC's ordinance recommends visual markers consistent with 1), above.

It should be noted that most of these requirements can be met either by specific bird safe glass and window assemblies or by film or adhesives that can be added to existing windows or to newly purchased windows that are not specifically bird-safe. Film can be a more cost-effective compliance path, although there could be instances where the application of a film could affect, or even void, a window's warranty.

Some bird safe regulations also permit the use of blinds or curtains to reduce window transparency. These approaches are considered sub-optimal, however, as they depend on the efforts of individual building users to be effective.

**The Planning Commission is asked to review the Discussion topics above and provide feedback and direction to staff on the preparation of a Bird Safe Ordinance. Specifically, staff requests feedback on the following questions:**

1. *What types of projects should be covered by bird safe requirements?*
  - Should there be provisions made for project size or for small-scale residential projects? What would be the threshold (e.g. above a certain number of units or square footage)?
  - Should certain projects (e.g. designated landmarks) be exempt?
  - Should there be a phase-in period for certain projects within the ordinance or should staff return with amendments to expand requirements, when appropriate?
2. *How much glazing should be bird safe?*
  - To what height should bird safe glazing be required?
  - Should requirements be on a whole-building or per-façade basis?
  - Should bird safe requirements only apply to glass panes of a minimum size?
  - What other building features (e.g. elevated pedestrian building connections, glass walls, glass atriums; and architectural projections, such as railings, balconies, louvers, or noise or wind barriers) should be subject to bird safety requirements?
3. *What materials qualify as bird safe?*
  - Should the ordinance include specific requirements, per ABC's Model Ordinance, or should there be more discretion given to staff to ascertain compliance?

## **NEXT STEPS**

Based on direction provided by the Planning Commission, staff will prepare Zoning Ordinance amendments for a public hearing at the Commission's meeting on December 7, 2022, consistent with BMC Chapter 23.412 Zoning Ordinance Amendments.

**ATTACHMENTS**

1. March 2, 2022, Bird Safe Berkeley Requirements Referral. Planning Commission Report.



Development Department  
Division

## STAFF REPORT

DATE: March 1, 2023  
TO: Members of the Planning Commission  
FROM: Justin Horner, Associate Planner  
SUBJECT: Bird Safe Berkeley Requirements Referral Response

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### SUMMARY

At their meeting on March 2, 2022, the Planning Commission, in response to a referral (Attachment 1) from the Community Environmental Advisory Commission (CEAC) and the City Council, provided direction for amendments to the Berkeley Municipal Code (BMC) establishing bird safety requirements for new construction and significant renovations. At their meeting of October 19, 2022, the Planning Commission established a Subcommittee to develop BMC amendments for consideration by the full Planning Commission. This report presents those amendments and alternatives.

Pursuant to Planning Commission and Subcommittee policy recommendations, with consideration of recent precedent standards from other jurisdictions, the proposed bird-safe requirements apply exclusively to projects based on the primary land use<sup>1</sup> when such projects require a building permit and meet the following criteria:

1. New non-residential buildings, or residential and mixed-use buildings with a total gross floor area<sup>2</sup> of 10,000 square feet (sf) or greater;
2. Materials on the facades of residential and mixed-use buildings of *less than* 10,000 sf where transparent materials consist of more than 50 percent of that façade's<sup>3</sup> total square footage;
3. New or replacement windows on existing buildings;
4. A minimum transparent material size of 12 sf for bird-safe requirements, or 24 sf for transparent buildings or building features.

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<sup>1</sup> BMC 23.502.020(U)(10) Defined Terms (Use, Primary). *The main purpose for which a site is developed and occupied, including the activities that are conducted on the site a majority of the hours during which activities occur.* [https://berkeley.municipal.codes/BMC/23.502.020\(U\)\(10\)](https://berkeley.municipal.codes/BMC/23.502.020(U)(10))

<sup>2</sup> BMC 23.106.030 Floor Area, Gross. <https://berkeley.municipal.codes/BMC/23.106.030>

<sup>3</sup> BMC 23.502.020(F)(1) Defined Terms (Façade). *Those portions of a building, including exterior walls, porches, chimneys, balconies, parapets and roof portions, which are visible from a public right-of-way or an adjacent building.* [https://berkeley.municipal.codes/BMC/23.502.020\(F\)\(1\)](https://berkeley.municipal.codes/BMC/23.502.020(F)(1))

Four pathways are provided for compliance with the Ordinance:

1. Threat factor rating. An element or material would comply with the Ordinance if it is listed in the ABC's online *Glass Collisions Products and Solutions Database*<sup>4</sup> with a Threat Factor Rating of 30 or less at the time of Building Permit issuance.
2. Surface treatment. An element or material would comply with the Ordinance if it includes patterns that are etched, fritted, stenciled, silk-screened or otherwise permanently incorporated into the transparent material.
3. Screens and shutters. An element or material would comply with the Ordinance if it were covered with an exterior screen, shutter or shading device, or insect or solar screen that was permanently installed on the building exterior.
4. Biologist certification. A proposed project could also comply with the Ordinance if a qualified biologist were to indicate that the proposed construction methods and materials would reduce the risk of bird collision to an extent comparable to the other compliance paths.

Staff seeks Planning Commission's recommendation to the City Council on the proposed BMC amendments and alternative considerations.

## BACKGROUND

At their meeting on March 2, 2022, the Planning Commission received a report and presentation on the referral from the CEAC, the studied effects of built environments on bird populations, a brief discussion of how Berkeley's particular geography relates to bird populations, and a review of existing regulatory efforts in Bay Area cities regarding bird safety (*Attachment 2*). Staff then presented a draft proposal and received feedback from the Design Review Committee at their September 15, 2022 meeting. At their meeting of October 19, 2022, the Planning Commission received an additional report with a more specific set of policy questions, held a discussion, and established a Subcommittee (*Attachment 3*).

The Planning Commission provided guidance to the Subcommittee that included the following:

- Bird-safe regulations should be based on the **area of a transparent material**, not the size or type of the underlying project; and
- **Non-residential projects and larger mixed-use and residential projects** should be immediately covered by the regulations. Smaller residential projects should be phased in to the regulations.

The Design Review Committee met on September 15, 2022 and provided the following feedback:

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<sup>4</sup> <https://abcbirds.org/glass-collisions/products-database/>



- Bird-safe regulations should apply to **new construction, particularly non-residential and larger residential projects**, due to availability of bird-safe materials. Smaller residential projects should be phased in at a later period.
- Consider the current **costs, availability, and terms of warranty** of bird-safe materials in the regulations.

The Planning Commission Subcommittee met on November 4, 2022 and provided the following feedback:

- Bird-safe regulations should immediately apply to all non-residential projects and residential and mixed-use projects of **10 units or more**;
- For residential and mixed-use project of 9 or fewer units, **bird-safe regulations should apply only** to a façade where transparent materials make up more than 50 percent of the total area of the façade; and
- Small windows of **a square meter or less** should be exempt.

## PROPOSED ZONING ORDINANCE

Based upon guidance provided by the CEAC, the Planning Commission, the Bird-Safe Ordinance Subcommittee, the Design Review Committee, established precedents, and members of the public, staff has drafted a new Ordinance for BMC Section 23.304.150 Bird Safe Buildings (*Attachment 4*). The new Section 23.304.150 would include the following:

### Purpose Statement

**A. Purpose.** The purpose of this section is to reduce bird mortality from windows and other transparent buildings or building features known to increase the risk of bird collisions.

Consistent with the Style Guide adopted as part of the Baseline Zoning Ordinance, the proposed Ordinance includes a Purpose statement. The proposed language is taken largely from the Purpose statement included in the CEAC's suggested Bird Safety Ordinance.

### Applicability

The Ordinance would apply to projects that require a building permit, and vary based on primary land use and, for residential or mixed-use, the size of the overall building, as set forth in Table 1. Note, the requirements would *not* apply to existing windows or other transparent materials that are *not* proposed to be replaced. The Ordinance also includes an exemption for affordable housing projects. Consistent with the threshold adopted for the Transportation Demand Management program, any residential projects, including the residential portions of mixed-use projects, in which the majority of the units are subject to recorded affordability restrictions, would be exempt.

Table 1. Bird-Safe Building Requirements

Project Type	Applicable Building Location(s)	
<b>Non-Residential</b>		
New Construction or Addition	Continuous transparent materials of 12 sf or larger located between the ground and 100 feet above grade.	
New or Replacement Transparent Materials on Existing Building	Continuous transparent materials of 12 sf or larger located between the ground and 100 feet above grade where 50% or more of the façade's total square footage consists of transparent material.	
New or Replacement Transparent Structures or Features	Continuous transparent material of 24 sf or larger, including but not limited to, freestanding glass walls, noise or wind barriers, skyways, balconies, greenhouses, and rooftop appurtenances.	
<b>Residential or Mixed Use</b>		
New Construction or Addition	Building with 10,000 sf or more gross floor area	Continuous transparent materials of 12 sf or larger located between the ground and 100 feet above grade.
	Building with less than 10,000 sf gross floor area	Continuous transparent materials of 12 sf or larger located between the ground and 100 feet above grade where 50% or more of the façade's total square footage consists of transparent material.
New or Replacement Transparent Materials on Existing Building	Building with 10,000 sf or more gross floor area	Continuous transparent materials of 12 sf or larger located between the ground and 100 feet above grade where 50% or more of the façade's total square footage consists of transparent material.
	Building with less than 10,000 sf gross floor area	Not applicable
New or Replacement Transparent Structures or Features	Continuous transparent material of 24 sf or larger, including but not limited to, freestanding glass walls, noise or wind barriers, skyways, balconies, greenhouses, and rooftop appurtenances.	

**Project Type:** The Ordinance would distinguish three project types:

1. New construction that includes transparent material;
2. New or replacement transparent materials on existing buildings; and
3. New or replacement buildings or building features that are largely transparent by design (e.g., greenhouses, glass walls, noise barriers).

**Primary Land Use and Building Size:** The Ordinance would distinguish between non-residential and residential/mixed-use uses, and would also distinguish between larger and smaller residential/mixed-use developments, consistent with the Planning Commission and Subcommittee direction.

While the Subcommittee recommended 10 units as the cut-off between large and small residential/mixed-use projects, staff recommends utilizing 10,000 sf of gross floor area as the threshold to account for units of varying sizes. An average housing unit is often estimated to have a floor area of approximately 900 to 1,000 gross square feet, so 10,000 sf is a comparable estimate. Square footage, as opposed to unit count, will also be the method by which proposed affordable housing requirements are calculated. For

consistency, staff recommends utilizing square footage, not unit count, as the threshold metric.

- **Alternative Option – Building Size.** An alternative approach could be to eliminate the distinction between primary land uses and classify by building size. This would ease administration in the case of possible future land use changes between residential and non-residential uses. In addition, as noted below, the difficulty in locating and obtaining bird safe materials locally may justify requiring them only for larger projects, which may presumably have the capacity to source harder-to-obtain materials. Mountain View, as one example, utilizes a single 10,000 sf threshold for most development types.

***Applicable Building Locations:*** Table 1 summarizes the types and locations of transparent materials that would be covered by the Ordinance for each project type. Notable aspects of these requirements include:

Continuous Transparent Material Panes 12 sf or Larger. Consistent with Planning Commission and Subcommittee direction to base bird-safe requirements on the size of transparent panes, bird-safe requirements would apply to windows or other continuous transparent materials of 12 sf or larger on eligible new construction and replacement projects. For purposes of the Ordinance, “continuous” means a transparent material that is not interrupted by a line, spacer, mullion, grille or other visible materials of at least 1/2” in width. Both Emeryville and the City of Alameda have adopted a 12 sf minimum threshold, and the Subcommittee recommended a 1 square meter threshold, which is roughly 11 sf.

- **Alternative Option – Size of Transparent Material:** The Subcommittee recommended the bird-safe requirements apply to windows and continuous transparent materials of 6 sf or larger, and that transparent materials would be considered “continuous” unless the transparent material was interrupted by a visible material of at least 4” in width.

100 Feet Above Grade. Consistent with the American Bird Conservancy’s (ABC) Model Ordinance and Planning Commission direction, bird-safe requirements would apply to eligible windows located between the ground and 100 feet above grade. For comparison, the City of New York’s requirements apply to the first 75 feet above grade, and Mountain View, Oakland, San Francisco and Evanston, Illinois (adopted June 2022) apply their standards only to the first 60 feet above grade.

Small Mixed-Use/Residential Standards and Window Replacement. Consistent with Planning Commission direction to avoid overly burdening smaller residential projects, the applicability of bird-safe requirements to smaller residential and mixed-use developments, as well as to projects that replace existing windows, would not be as broad as with larger projects. For these smaller projects, and for window replacements, bird-safe requirements would only apply to transparent materials of 12 sf or larger that are also located on facades that include transparent materials on 50 percent or more of

their surface area. In these cases—where the majority of the façade consists of transparent material and therefore constitutes a heightened risk of bird collision—bird-safe requirements would apply even if a project were smaller in scale.

This 50 percent threshold is consistent with the City of Alameda’s bird-safe regulations, as well as the CEAC’s recommended regulations.

- **Alternative Option – Size and Percentage for Smaller Projects:** The Subcommittee recommended that these bird-safe requirements for smaller projects be expanded to apply to materials of 6 sf or larger that are located on facades that include transparent materials as more than 30 percent of their surface area.

Specific Building Elements and Transparent Structures – No Grade Limit. For any continuous transparent material of 24 sf or larger, bird-safe requirements would apply, regardless of the element or structure’s distance from adjacent grade. Examples of these elements include freestanding glass walls, noise or wind barriers, skyways, balconies, greenhouses, and rooftop appurtenances.

These larger transparent elements are a particular collision risk, and a number of them, including noise and wind barriers, were specifically identified by the Planning Commission and Subcommittee as elements to be included. A number of jurisdictions, including New York City, City of Alameda, and Evanston, IL take similar steps to regulate these building elements. The American Bird Conservancy’s Model Ordinance includes them as well.

- **Alternative Option – Size for Transparent Buildings and Building Features:** The Subcommittee recommended that bird-safe requirements apply to any freestanding transparent walls, noise or wind barriers, skyways, balconies, greenhouses, and rooftop appurtenances of any size located anywhere in a project, as well as any corner location where transparent material meets transparent material, creating a total continuous transparent area of 6 sf or larger.

### Bird Safe Requirements

The Ordinance includes the following four methods of compliance for windows, transparent materials or any elements or structures covered by the Ordinance.

**1. American Bird Conservancy Threat Factor Rating:** An element or material would comply with the ordinance if it is listed in the ABC’s online *Glass Collisions Products and Solutions Database*<sup>5</sup> with a Threat Factor Rating of 30 or less at the time of Building Permit issuance.

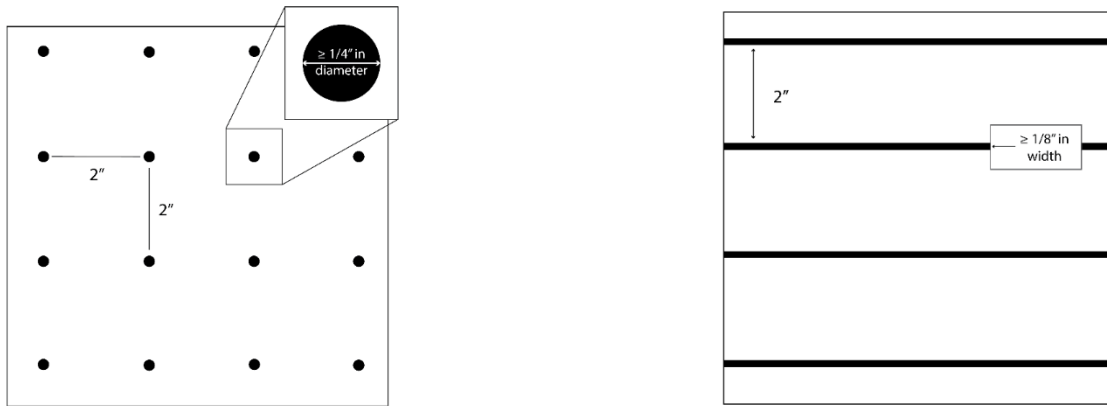
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<sup>5</sup> <https://abcbirds.org/glass-collisions/products-database/>

According to the ABC, a Threat Factor of 30 or less is the organization’s upper threshold for categorizing materials as bird friendly. The ABC included this threshold in their Model Ordinance, and Evanston includes it as their upper threshold in their Bird Safe Guidelines.

**2. Patterned Glazing Treatments:** An element or material would comply with the Ordinance if it includes patterns that are etched, fritted, stenciled, silk-screened or otherwise permanently incorporated into the transparent material. For a pattern that utilizes dots or other isolated solid shapes, each dot or shape must be at least a ¼” in diameter and be no more than 2’ apart in any direction. If the pattern utilizes lines, it must be at least 1/8” in width and spaced no more than 2” apart. Figure 1 illustrates this compliance path.

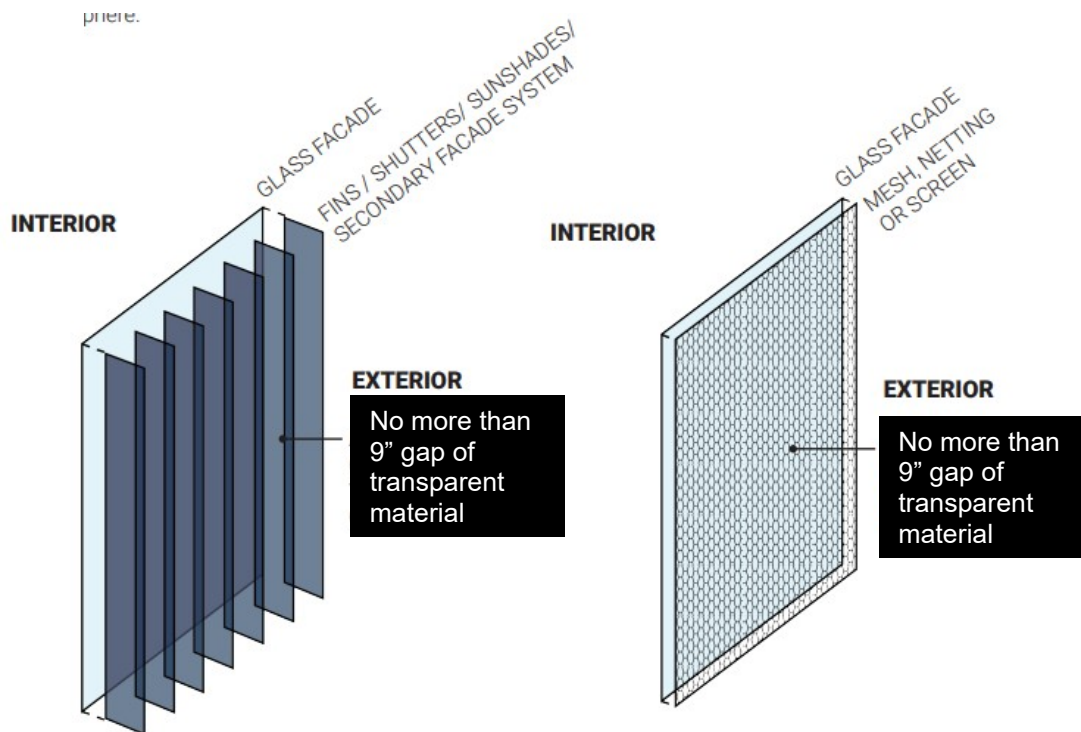
Figure 1. Patterned Glazing Treatments



The ABC Database also includes a number of products that would comply with this requirement.

**3. External Screens, Shutters or Shading Devices:** An element or material would comply with the Ordinance if it were covered with an exterior screen, shutter or shading device, or insect or solar screen that was permanently installed on the building exterior. Such a treatment would not create any gaps larger than 9” in any dimension (that is, a 9” diameter object could not pass through the treatment and strike the window or material). Figure 2 provides an illustration of this compliance path.

Figure 2. External Screens, Shutters or Shades



**4. Biologist Certification:** A project could also comply with the Ordinance if a qualified biologist were to indicate that the proposed construction methods and materials would reduce the risk of bird collision to an extent comparable to the other compliance paths. Staff recognize that there may be an alternative method or technology that is not yet listed in the three compliance paths above but could be equally effective. An ABC Threat Factor Rating of 30 represents a 50 percent reduction in collision risk compared to untreated materials so that threshold could be used by a biologist to determine that a project's methods and materials would meet that standard. Regulations in Mountain View, Emeryville and Alameda include compliance paths that permit biologist certification of bird safe measures.

- **Alternative Option – Remove Biologist Certification Path:** The Subcommittee recommended against including the option of Biologist Certification, believing it could allow a project sponsor to avoid bird safe requirements with unverifiable analysis and unenforceable recommendations. Note, additional standards could be established to require peer review and modification as part of a permit process to address this concern.

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### Phasing Regulations

Both the Planning Commission and the Design Review Committee recommended including a phase-in date in the Ordinance for the regulation of smaller (less than 10,000 sf) residential and mixed-use projects. The recommended phase-in dates ranged from 7 to 10 years from adoption of the Ordinance.

A phase-in date is not included in the proposed Ordinance because staff does not recommend pre-committing future City Councils, and future residents, to new regulations that far into the future, when circumstances may be entirely different and a variety of new factors could impact policy direction. There is also already a process to amend the Zoning Ordinance if future Planning Commissions and City Councils wish to change the requirements of the Ordinance.

### Compliance and Enforcement

The draft Ordinance specifies that Bird Safe requirements would only apply to projects that require a building permit. Replacing broken windows or individual window panes are considered repairs and do not require a building permit. For example, an existing window that needs to be repaired because it was broken by an errant baseball would not be subject to Bird Safe requirements.

Project plans would be required to include a stamp from the project applicant attesting that the project would comply with Bird Safe requirements, and the window schedule for proposed projects would need to indicate the transparent materials subject to Bird Safe requirements and the compliance path being selected for each applicable material.

### Public Information Document

Upon adoption of the proposed Ordinance, staff will prepare a public information document to explain the Bird Safe requirements and its purpose in common language, and provide guidance to project applicants as to where to obtain compliant materials.

While ABC's Database includes more than 150 rated materials, it does not provide information about where to purchase items or whether they are available in Berkeley or the Greater Bay Area. The public information document would include purchasing options for specific products included in the ABC Database.

### Product Availability

Staff does register concern about the current availability of bird safe materials, particularly for smaller-scale residential projects. Both the Design Review Committee and the Planning Commission expressed similar concerns, and the proposed Ordinance strives to address the concern by distinguishing between projects that are larger or smaller than 10,000 square feet.

With the assistance of the City of Berkeley's Office of Economic Development, staff contacted 13 Berkeley-based building material retailers to inquire into the availability of bird safe products. None of the 13 businesses carried bird safe products, and at least three businesses had not heard of bird safe options for window products. This mirrors research done by a member of the Design Review Committee who contacted three local

residential window suppliers (Ashby Lumber, Associated Building Supply and Glass Concepts) and a territory manager for BMD, a distributor of Marvin windows. None of the local suppliers have much experience with bird-safe materials because of the added cost, and most of them had experiences with clients choosing not to use bird-safe materials because of cost.

That said, a number of projects that include bird safe glass have recently been approved in Berkeley. Berkeley Commons consists of two three-story research and development buildings located along the historic Berkeley shoreline. The project developer initially considered sourcing bird safe glass from Interpane, a German company, but switched to Viracon, a US company, due to supply chain issues. A representative approached by staff noted that obtaining glass with ceramic fritting was difficult and added more than \$8 per square foot to their window order. Another non-residential project also needed to switch from their original manufacturer to Viracon once the choice was made to use bird safe glass.

Staff will continue working to identify local retailers of bird safe products, but availability of bird safe materials may be a challenge in the near-term. Staff has requested assistance from Golden Gate Audubon to identify local sources of bird safe materials.

#### **NEXT STEPS AND RECOMMENDATION**

Staff recommends that the Planning Commission conduct a Public Hearing, receive public comment, discuss draft Ordinance amendments, provide direction, and forward a recommendation to City Council, with any changes identified through a vote of the Planning Commission.

#### **ATTACHMENTS**

1. November 12 2019, Bird Safe Referral. City Council.
2. March 2, 2022, Bird Safe Berkeley Requirements Referral. Planning Commission Report.
3. October 19, 2022, Planning Commission Report.
4. Proposed Bird Safe Buildings Ordinance





City of Berkeley  
Planning Commission

To: Honorable Mayor and Members of the City Council  
From: Planning Commission (Jeff Vincent and Alfred Twu)  
Re: Birdsafe Glass Ordinance  
Date: March 23, 2023

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On March 1, 2023, the Planning Commission (PC) took action to recommend a new bird safe glass ordinance for City Council consideration. PC's action was in response to a November 12, 2019 referral from the Community Environmental Advisory Commission (CEAC) and the City Council. The PC discussed this item at three meetings: March 2, 2022, October 19, 2022, and March 1, 2023. The PC also convened a Subcommittee on bird safe requirements. The Subcommittee met on three occasions: November 4, 2022, January 20, 2023 and February 8, 2023. This memo provides context on the Planning Commission's rationale for the recommendation to the City Council.

As described in the referral and the staff reports, bird populations have been declining and collisions with building windows are a major cause. Bird safe glass includes glass with tiny dots or thin lines etched or silk screened onto the glass, spaced a couple inches apart.

In the Bay Area, a handful of cities have adopted Bird Safe Building ordinances. Each of these ordinances differs on specifics (and all have less stringent birdsafe glass requirements compared to model policies currently being advocated for). Most of these ordinances contain exemptions for smaller panes of glass (For example, Emeryville's ordinance exempts glass panes under 12 square feet).

In 2019, New York City passed a relatively more stringent birdsafe glass ordinance. ["Materials other than bird friendly materials shall not exceed an aggregate of 10 square feet (0.93 m<sup>2</sup>) within any 10 feet (3048 mm) by 10 feet (3048 mm) square area of exterior wall below 75 feet (22 860 mm) above grade."<sup>1</sup>

While early drafts for a Berkeley ordinance were modeled on existing ordinances, elements of the staff recommendation were based on more recent ordinances, including Evanston, IL, and on the CEAC's proposed ordinance.

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<sup>1</sup> [https://www.nyc.gov/assets/buildings/bldgs\\_bulletins/bird\\_friendly\\_guidance\\_document.pdf](https://www.nyc.gov/assets/buildings/bldgs_bulletins/bird_friendly_guidance_document.pdf), pg. 11; and the New York City building code: <https://up.codes/s/bird-friendly-materials>

The PC has received much public comment from organizations/individuals urging the City of Berkeley to adopt a strong ordinance similar to New York City's and the model ordinance developed by the Golden Gate Audubon Society.

PC members overwhelmingly support actions that protect birds. Members repeatedly voiced support for a strong, yet implementable, birdsafe glass ordinance. However, we have concerns about feasibility. A central concern is whether cost and /or availability hinder the production of housing, especially affordable housing. We do not feel we have enough information to fully answer this question.

- What is the availability of bird safe glass products?
  - *Answer provided in staff report or during PC meeting discussion:* It appears that birdsafe glass options are becoming more available each year. Large projects buy glass directly from manufacturers, who appear to offer bird safe glass options. Smaller projects, like a house renovation or a new duplex, get premade windows from retailers, most of whom presently do not appear to have bird safe windows. Staff were unable to find any local retailers that carry bird safe windows.
- How much additional cost will this add to projects, especially if materials are not readily and quickly available?
  - *Answer provided in staff report or during PC meeting discussion:* PC determined that current information about cost does not make it prohibitive for large projects and part of the intent of adopting bird safe requirements is that requirements could create a demand for products, thereby reducing costs. One estimate provided to PC by a member of the Golden Gate Audubon Society found “an increase of 0.17% to 0.38% for large new construction projects (e.g., a few hundred dollars for an apartment with a handful of windows).” In response to Staff inquiry, a representative for the Berkeley Commons project noted that obtaining glass with ceramic fritting added more than \$8 per square foot to their window order. Staff were unable to find any estimates for small residential projects due to lack of local availability.
- How soon should an ordinance be put in place?
  - *Answer provided in staff report or during PC meeting discussion:* Given the concerns about cost and availability, the PC tried to solve this by suggesting that the ordinance be phased in based on type and size of building and size of percentage of glass on surface, etc. [For example, the NYC ordinance had a one-year phase-in, see: [https://www.nyc.gov/assets/buildings/local\\_laws/ll15of2020.pdf](https://www.nyc.gov/assets/buildings/local_laws/ll15of2020.pdf), pg 3.

The PC unanimously recommended that the CC adopt the Golden Gate Audubon Society's proposal for birdsafe regulations, with the following amendments (in **bold**), which PC felt would balance the urgency of protecting birds with the practical need of giving the construction supply chain enough time to adapt:

- (Non-Residential/New or Replacement Transparent Materials on Existing Buildings). Buildings where every façade's total square footage consists of less than ~~50%~~**30%** transparent material are exempt through January 1, ~~2028~~**2025**.
- (Residential or Mixed Use/New Construction or Addition/Buildings with less than 10,000 sf gross floor area) Buildings where every façade's total square footage consists of less than ~~50%~~**30%** transparent material are exempt through January 1, ~~2028~~**2025**.
- (New or Replacement Transparent Materials on Existing Building) Buildings where every façade's total square footage consists of less than ~~50%~~**30%** transparent material are exempt through January 1, 2028.
- (Exemptions) Residential projects, including the residential portion of mixed-use projects, where greater than ~~75%~~**50%** of the units are subject to recorded affordability restrictions, **are exempt from the requirements of this ordinance until January 1, 2025**, except that New or Replacement Transparent Building Features as described in Table 1-23.304.XX are not exempt.
- The removal of a provision that would allow for determination by a qualified biologist. PC felt that because there is no licensing for biologists (unlike architects or engineers), this may create a loophole that could be exploited. There remains a path for new materials to be certified by standards agencies that certify bird safe glass products for the entire country.

**23.304.150 Bird Safe Buildings.**

**A. Purpose.** The purpose of this section is to reduce bird mortality from windows and other transparent buildings or building features known to increase the risk of bird collisions.

**B. Applicability.**

1. *Applicability.* The bird safe building requirements apply to the following types of projects based on the primary land use when such projects require a building permit.

**Table 1 - 23.304.XX. Bird Safe Building Requirement Applicability**

Project Type	Applicable Building Location(s)	
<b>Non-Residential</b>		
New Construction or Addition	<del>Continuous-All</del> transparent <u>or reflective</u> materials <del>of 12 sf or larger</del> located between the ground and 100 feet above grade.	
New or Replacement Transparent <u>and Reflective</u> Materials on Existing Building	<del>Continuous-All</del> transparent <u>or reflective</u> materials <del>of 12 sf or larger</del> located between the ground and 100 feet above grade  <u>Buildings where every façade's total square footage consists of less than where 5030% or more of the elevation's total square footage consists of transparent material are exempt through January 1, 2025.</u>	
New or Replacement Transparent <u>and Reflective</u> Buildings or Features	<del>Continuous-All</del> transparent material <del>of 24 sf or larger</del> , including but not limited to, freestanding glass walls, noise or wind barriers, skyways, balconies, greenhouses, and rooftop appurtenances. <u>No exemptions for these high hazard features.</u>	
<b>Residential or Mixed Use</b>		
New Construction or Addition	Building with 10,000 sf or more gross floor area	<del>Continuous-All</del> transparent <u>or reflective</u> materials <del>of 12 sf or larger</del> located between the ground and 100 feet above grade.
	Building with less than 10,000 sf gross floor area	<del>Continuous-All</del> transparent <u>or reflective</u> materials <del>of 12 sf or larger</del> located between the ground and 100 feet above grade.  <u>Buildings where every façade's total square footage consists of less than 5030% or more of the façade's total square footage consists of transparent material are exempt through January 1, 2025.</u>
New or Replacement Transparent Materials on Existing Building	<del>Building with 10,000 sf or more gross floor area</del>	<del>Continuous-All</del> transparent <u>or reflective</u> materials <del>of 12 sf or larger</del> located between the ground and 100 feet above grade.

		<del>where</del> Buildings where every façade's total square footage consists of less than 50% <del>30% or more of the façade's total square footage consists of</del> transparent material are exempt through January 1, <del>2028</del> .
	Building with less than 10,000 sf gross floor area	Not applicable
New or Replacement Transparent Buildings or Features	<del>Continuous</del> All transparent material of 24 sf or larger, including but not limited to, freestanding glass walls, noise or wind barriers, skyways, balconies, greenhouses, and rooftop appurtenances. <u>No exemptions for these high-hazard features.</u>	

2. Exemptions.

- a. The bird safe building requirements do not apply to existing windows or other transparent materials that are not proposed to be replaced.
- b. Residential projects, including the residential portion of mixed-use projects, ~~with the majority~~ where greater than 50% of the units are subject to recorded affordability restrictions are exempt from the provisions of this section until January 1, 2025, except that. If added to an existing building or property, the entire building or property is exempt. New or Replacement Transparent Building Features as described in Table 1 – 23.304.XX are not exempt.

~~3. Continuous Transparent Material. Transparent material that is not interrupted by a line, spacer, mullion, grille or other visible material at least 1/2" in width.~~

**C. Bird Safe Requirements.** Any regulated continuous transparent material must meet at least one of the following conditions:

1. *Threat Factor Rating.* A product with an American Bird Conservancy Threat Factor Rating of 30 or less.
2. *Patterned Glazing Treatment.* The glass assembly must have all the following characteristics:
  - a. Visible Light Reflectance from the Exterior ≤ 15%;

b. Frit, ceramic ink, or other marker types must be opaque (or have a Visible Contrast Level > .0 from BirdVis app (<http://3.140.67.204:3838/Luro>, 2021)

c. As viewed from Surface 1, all low-e coatings must be behind the pattern;

d. Clear or low-iron glass;

e. A pattern that is made up of one of the following elements or a combination:

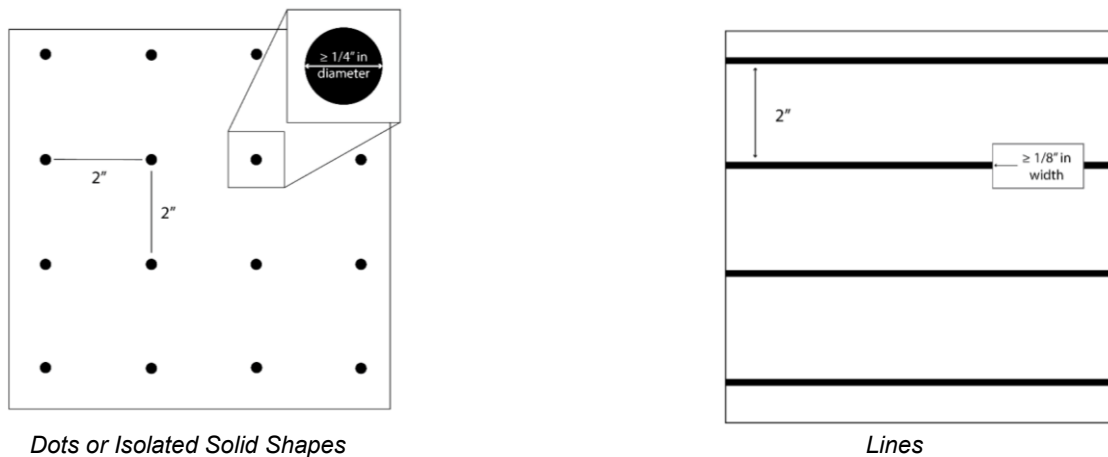
1. Continuous lines at least 1/8" wide, nowhere more than 2" apart, measures edge to edge (see Figure 23.304.XXX, right);

2. Circular, square, or irregular solid shapes that are nowhere more than 2" from another shape, measured horizontally or vertically, (edge to edge) or 2.83" diagonally (see Figure 23.304.XXX, left). Each shape must have a minimum area of  $\geq 0.20$  square inches, which corresponds approximately with circles of diameter  $\frac{1}{4}$ "; and

f. Patterns on side 1 or side 2 only.

~~2. Panes with patterns that are etched, fritted, stenciled, silk-screened, or otherwise permanently incorporated into the transparent material. If the pattern utilizes dots or other isolated solid shapes, each dot or shape must be at least a  $\frac{1}{4}$ " in diameter and be no more than 2' apart in any direction (see Figure 23.304.XXX, left). If the pattern utilizes lines, they must be at least  $\frac{1}{6}$ " in width and spaced no more than 2" apart (see Figure 23.304.XXX, left).~~

Figure 23.304.XXX Patterned Glazing Treatment Requirements



3. *External Screens, Shutters, or Shading Devices.* Panes with exterior screens, shutters or shading devices installed permanently over windows, structures, or building features such that there is no gap larger than 9 inches in one dimension. Building integrated treatments include, but are not limited to, metal screens, shutters, fixed solar shading such as louvres, and exterior insect or solar screens.

~~4. *Biologist Certification.* Analysis by a qualified biologist indicating that the proposed construction would reduce collision risk to an extent comparable to the requirements of this section.~~

**NOTICE OF PUBLIC HEARING  
BERKELEY CITY COUNCIL**

**ZONING ORDINANCE AMENDMENTS TO ADD A NEW BERKELEY  
MUNICIPAL CODE SECTION 23.304.150 (BIRD SAFE BUILDINGS)**

The Department of Planning and Development is proposing zoning amendments to the Berkeley Municipal Code (BMC) establishing bird safety requirements for new construction and significant renovations to reduce the incidence of bird strikes on Berkeley buildings. The zoning amendments would define bird-safe requirements and the types of projects that would be subject to these requirements. Bird-safe requirements include rated transparent material, glazing treatment, and external screens, shutters, or shading devices.

The hearing will be held on, TUESDAY, JUNE 6, 2023 at 6:00 p.m. in the School District Board Room, 1231 Addison Street, Berkeley, CA 94702.

A copy of the agenda material for this hearing will be available on the City’s website at [www.berkeleyca.gov](http://www.berkeleyca.gov) as of **May 25, 2023**. **Once posted, the agenda for this meeting will include a link for public participation using Zoom video technology, as well as any health and safety requirements for in-person attendance.**

For further information, please contact Justin Horner, Associate Planner at 510-981-7476.

Written comments should be mailed or delivered directly to the City Clerk, 2180 Milvia Street, Berkeley, CA 94704, or e-mailed to [council@cityofberkeley.info](mailto:council@cityofberkeley.info) in order to ensure delivery to all Councilmembers and inclusion in the agenda packet.

Communications to the Berkeley City Council are public record and will become part of the City’s electronic records, which are accessible through the City’s website. **Please note: e-mail addresses, names, addresses, and other contact information are not required, but if included in any communication to the City Council, will become part of the public record.** If you do not want your e-mail address or any other contact information to be made public, you may deliver communications via U.S. Postal Service or in person to the City Clerk. If you do not want your contact information included in the public record, please do not include that information in your communication. Please contact the City Clerk at 981-6900 or [clerk@cityofberkeley.info](mailto:clerk@cityofberkeley.info) for further information.

**Published:** May 26, 2023 – The Berkeley Voice

Public Hearing required by BMC 23.412.050 and Govt Code 65853; notice provided according to Govt Code 65090 and BMC 23.404.040.

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I hereby certify that the Notice for this Public Hearing of the Berkeley City Council was posted at the display case located near the walkway in front of the Maudelle Shirek Building, 2134 Martin Luther King Jr. Way, as well as on the City's website, on May 25, 2023.

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Mark Numainville, City Clerk

