EMERYVILLE PLANNING COMMISSION

STAFF REPORT

Agenda Date: April 23, 2020
Report Date: April 16, 2020

TO: Emeryville Planning Commission

FROM: Community Development Department
Diana Keena, Associate Planner

SUBJECT: **Bird-Safe Building Standards (ORD20-002)**

PROJECT DESCRIPTION: Consideration of a proposed ordinance amending the Planning Regulations in Title 9 of the Emeryville Municipal Code by adding Article 8 to Chapter 4, and amending Article 7 of Chapter 4, regarding bird-safe building design.

BACKGROUND:

On October 2, 2018, the City Council directed staff to schedule a Council discussion on bird-friendly design guidelines to reduce bird collisions. On February 5, 2018, the Council held a discussion on the topic and directed staff to schedule a Planning Commission study session. On September 26, 2019, the Planning Commission held a study session and recommended adopting standards in the Planning Regulations to apply citywide. On November 5, 2019, the Council held a study session and directed staff to prepare an ordinance putting standards in the Planning Regulations, and applying them citywide. The Council staff report from the November study session is attached for reference.

DISCUSSION:

The attached resolution recommends City Council adoption of an ordinance to add a new Article 8, "Bird-Safe Buildings", and to amend Article 7, "Other Site Development Regulations", in Chapter 4, "Site Development Regulations" in the Planning Regulations at Title 9 of the Emeryville Municipal Code.

The new Article 8 sets standards that apply to new construction, window replacement, and glass structures. The bird-safe glazing requirement applies to contiguous glass areas of 12 square feet or more. Bird-safe glazing treatments must be used in 90% of the glazing on any building façade or glass structure and glass near plants or water features. Bird-safe features can be external screens; translucent glass; glass covered with patterns that are within 2 inches vertically or 4 inches horizontally (the 2 by 4 rule); grates, nets or cords meeting the 2 by 4 rule; grooved glass block; or equivalent treatments approved by the Planning Director. Alternatively, applicants may submit a plan prepared by a qualified biologist that includes layering and recessing of glass,

angled or faceted glass, louvers or grates not meeting the 2 by 4 rule, overhangs or awnings, clear glass block, grilles, glass with photovoltaic cells, or plant placement. Interior lighting requirements include automatic light shutoff systems in non-residential spaces and window coverings as part of all building construction projects. Site design requirements include no mirrors near landscaping and vent grates meeting the 2 by 4 rule.

The amendments to Article 7 address outdoor lighting. They repeal the exemption of spotlights, search lights and lasers for special events, limit lights that highlight architectural features or art to one 100-watt bulb or equivalent, limit security lighting to 8 feet above the ground, and prohibit spotlights, searchlights, lasers, beams, floodlights, and mercury vapor lights.

FINDINGS:

In order to recommend the proposed Ordinance, which modifies the Planning Regulations, the Planning Commission must make the findings required by Section 9-7.1305. Staff believes that these findings can be made for the following reasons:

(a) The proposed amendment is consistent with the General Plan.

The Ordinance is consistent with General Plan goal CSN-G-5 "Preservation and protection of natural resources" because it will protect birds. The Ordinance is also consistent with General Plan goal CSN-G-1 "Protection of public health" because birds control insects and rodents that spread diseases.

(b) The proposed amendment is necessary for public health, safety and welfare or will be of benefit to the public.

The Ordinance is necessary for public health, safety and welfare to protect birds from window collisions and other building injuries. Birds promote human health by controlling insects and rodents that spread diseases. Birds promote human welfare by providing beauty and songs for people to enjoy. Protection of birds will also benefit the public because birds pollinate plants and spread seeds.

(c) The proposed amendment has been reviewed in compliance with the requirements of the California Environmental Quality Act.

The Ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) under the "common sense exemption" at CEQA Guidelines Section 15061(b)(3) because it can be seen with certainty that there is no possibility that the amendment may have a significant effect on the environment.

(d) For a change to the Zoning Maps, that the subject property is suitable for the uses permitted in the proposed zone in terms of access, size of parcel, relationship to similar or related uses, and

other relevant considerations, and that the proposed change of zoning district is not detrimental to the use of adjacent properties.

No changes to the Zoning Map in Figure 3.103(a) or the Zoning Overlay Map in Figure 9-3.103(b) of the Planning Regulations are proposed.

RECOMMENDATION:

Staff recommends that the Planning Commission recommend City Council adoption of the proposed amendments to the Planning Regulations as detailed in the attached resolution.

Attachments:
1. Staff report from November 5, 2019 City Council Study Session
2. Resolution

City of Emeryville
CALIFORNIA

MEMORANDUM

DATE: February 5, 2019

TO: Christine Daniel, City Manager

FROM: Charles S. Bryant, Community Development Director

SUBJECT: **Direction on Development of Bird-Safe Building Standards**

RECOMMENDATION

Staff requests that the City Council provide direction as to whether and how Emeryville should adopt bird-safe building standards.

BACKGROUND

At the City Council meeting on October 2, 2018, then Mayor Bauters requested that the Planning Commission study bird-friendly design guidelines in Emeryville in the next 6-12 months. Following discussion, the Council directed that the matter be brought to the Council for discussion and direction at a future meeting. This report is responsive to that Council direction.

While staff is not aware that bird strikes and other bird safety issues related to building design have been significant problems in Emeryville, they have been raised as concerns in the urban environment generally. According to the U.S. Fish and Wildlife Service (FWS), collisions with building glass are estimated to kill between 365 million and 988 million birds annually in the United States, with a median annual estimate of 599 million. This makes building collisions the second greatest source of direct mortality of birds. The greatest threat to birds, according to FWS, is cats, accounting for a median annual estimate of 2.4 billion bird deaths per year. Other threats cited by FWS, and their median estimates of bird mortality, include collisions with motor vehicles (214.5 million bird deaths per year), poison (72 million), collisions with electrical lines (25.5 million), collisions with communication towers (6.6 million), electrocutions (5.6 million), oil pits and evaporation ponds (750,000), and collisions with wind turbines (234,000). In addition, habitat loss is thought to pose by far the greatest threat to birds, both directly and indirectly; however, its overall impact on bird populations is very difficult to directly assess. (Source: https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php.)

According to the Golden Gate Audubon Society (GGAS), in 2011, San Francisco became the first city in the nation to adopt bird safe building standards. On July 14, 2011, the San Francisco Planning Commission adopted “Standards for Bird-Safe Buildings”. This was followed by an ordinance codifying bird-safe building standards in the San Francisco Planning Code, passed by the Board of Supervisors on September 27, 2011 and signed by the Mayor on October 27, 2011. GGAS further notes that the City of Oakland’s planning

Attachment 1

staff added Bird Safety Measures to their standard building permit requirements in June 2013, Richmond approved Bird Safe Standards in 2016, and Alameda approved Bird Safe Building Standards in 2018. Other cities that have passed bird-safe building standards, according to GGAS, include Sunnyvale and Palo Alto, while Portland, Oregon, and Highland Park, Illinois, are currently considering them.

According to San Francisco's Standards for Bird-Safe Buildings (the "Standards"), glass and lighting are the two primary types of building-related hazards for birds, and there are two categories of these hazards: "location-related" hazards, and "feature-related" hazards.

Location-related hazards pertain to the "Bird Collision Zone" of buildings within 300 feet of an "Urban Bird Refuge". The "Bird Collision Zone" is the portion of building most likely to sustain bird strikes. It begins at grade and extends upwards for 60 feet. This zone also applies to glass façades directly adjacent to large landscaped roofs of two acres or larger, and extends upward 60 feet from the level of the roof. An "Urban Bird Refuge" is an open space two acres or larger dominated by vegetation, including vegetated landscaping, forest, meadows, grassland, water features or wetlands; open water; and green rooftops of two acres or larger.

A feature-related hazard is a feature that creates hazards for birds in flight unrelated to the location of the building. Feature-related hazards include free-standing clear glass walls, skywalks, greenhouses on rooftops, and balconies that have unbroken glazed segments 24 square feet and larger.

In both cases, the Standards include glass and façade treatments, lighting treatments, and provisions for wind generators. Glass and façade treatments include fritted and frosted glass, angled glass, ultra-violet glass, film and art treatment of glass, external screens, architectural features, and netting. Lighting treatments include standards for lighting design and lighting operations. Concerning wind generators, the Standards notes: "While it is unreasonable to believe that these small urban systems would cause the annihilation of birds … a certain amount of caution is prudent in the absence of established scientific research. …The only clear way at present to learn whether small urban wind generators will harm birds is to allow the installation of a few, and to monitor the interactions with animals, if any."

DISCUSSION

Should the City Council wish to move forward with this topic, based on the experience of other cities, there appear to be a number of ways that Emeryville could consider adopting bird safe building standards. One option for action would be to rely on the CEQA process to identify potential bird hazards of proposed new projects on a case-by-case basis. Alternatively, staff could develop bird safety measures that could be included in projects' conditions of approval, similar to what Oakland has done. Another possibility would be to add bird safety measures to the Emeryville Design Guidelines, which are implemented

through the design review process (all new and modified buildings require design review in Emeryville). Finally, an ordinance amending the Planning Regulations to codify bird safe building regulations could be considered, similar to what San Francisco has done.

Either the CEQA option or the standard condition of approval option would be implemented by staff upon the direction of the City Council. An amendment to the Emeryville Design Guidelines requires passage of a Resolution by the City Council following a recommendation from the Planning Commission. Similarly, an amendment to the Planning Regulations requires passage of an Ordinance by the Council following a recommendation from the Commission.

CONCLUSION

Staff recommends that the matter be referred to the Planning Commission for a study session to weigh the various options. Staff would then bring the Commission's recommendation from the study session back to the Council for further direction.

APPROVED AND FORWARDED TO THE
CITY COUNCIL OF THE CITY OF EMERYVILLE:

Christine Daniel, City Manager

Bird-Safe Buildings Timeline - Technology, Science, and Policy

1916	US Migratory Bird Treaty Act adpted for treaty with Canada
1950s	Most windows are openable with insect screens, which prevent collisions
1960s	Picture windows become widely available, installed without screens
1973	US Endangered Species Act adopted
1980s	Glass buildings, balconies, railings, skywalks, greenhouses, gazebos become common
1980s	Biologists begin studying bird-glass collisions
1989	Klem finds window height and size do not affect chance of bird-glass collisions
1990s	Scientists recommend screens or netting and reduced glass area
2000s	Glass treatments tested - patterns 2" apart vertically or 4" apart horizontally
2005	Birds and Building forum held in Chicago
2007	Toronto adopts Bird-Friendly Development Guidelines (updated in 2013 and 2017)
2008	Hager finds area of windows predict bird strikes more than height or nearby habitat
2011	American Bird Conservancy (ABC) publishes Bird-Friendly Building Design booklet
2011	ABC publishes numeric Material Threat Factors for glass treatments
2011	US Green Buildling Council adds LEED Pilot Credit 55: Bird Collision Deterrence
2011	Highland Park, IL adopts requirements for City buildings including patterns on windows
2011	Calgary adopts Bird-Friendly Urban Design Guideliens
2011	San Francisco adopts Ordinance requiring more treatment in first 6 stories near open spaces
2012	Portland adopts voluntary measures
2013	State of Minnesota adopts design guidelines for state funded buildings using Threat Factors
2013	Oakland adopts measures for Building Permit Review for first 6 stories near open spaces
2014	Sunnyvale adopts voluntary Design Guidelines toavoid reflective glass first 60 feet
2014	US Fish and Wildlife Service study (Loss et al) estimates annual mortality at 365-999 million/year - all sizes of buildings
2015	American Bird Conservancy updates Bird-Friendly Building Design booklet - all parts of buildings, all sizes of windows, all locations, hummingbirds see UV-treated glass
2015	San Jose adopts voluntary measures with no location limit
2015	Federal Bird-Safe Buildings Bill (HR 2280) introduced, 10% clear glass below 40', 40% above
2015	HIghland Park, IL adopts requirements for all buildings
2016	Richmond adopts ordinance, treat first 6 stories near open spaces, residential panes 24 sq ft
2016	California Academy of Sciences study (Kahle et al) - mitigation is required all year here, low rise buildngs need to be treated, and most victims in the study were hummingbirds
2018	Alameda adopts ordinance, no locaiton limit, treat residential panes 12 sq feet
2019	Berkeley committee approves ordinance, no location limit, residential panes 8 sq ft
2019	Science publishes estimate that since 1970 bird populations in US and Canada have declined by 29%, almost 4 billion birds, hundreds of species, shorebirds by a third.

Note: Much of this information is from Seewagen, C. L. and Christine Sheppard, 2017. *Bird collisions with windows: An annotated bibliography* . American Bird Conservancy, Washington, DC. 41 pages.

Attachment 2

Account

Our "watch" feature allows you to stay current on all aspects of this specific credit. In your account, you can control what you get updated on and how you receive your notifications. Hide

LEED BD+C: New Construction | v3 - LEED 2009

Bird collision deterrence

SSpc55 | Possible 1 point

Intent

Reduce bird injury and mortality from in-flight collisions with buildings.

Requirements

Comply with the “Building façade and site structures,” “Exterior lighting,” and “Performance monitoring plan” requirements below.

Building façade and site structures

Develop a building façade and site design strategy to make the building and site structures visible as physical barriers to birds.

If all materials on the building façade have a Threat Factor of 15 or below, the project is exempt from the building façade requirements and the following Bird Collision Threat Rating calculations are not required. If any material on the building façade has a Threat Factor above 15, then the Bird Collision Threat Factor Rating calculations are required.

All other structures on the site, including, but not limited to handrails, guardrails, windscreens, noise barriers, gazebos, pool safety fencing, bus shelters, band shells, etc. must be constructed entirely of materials with a threat score value of 15 or less.

Steps for calculating the Bird Collision Threat Rating (BCTR)

First separate each building facade into Façade Zone 1 and Façade Zone 2. Façade Zone 1 includes the first 36 feet above grade, measured from grade at all points, as well as 12 feet above any green roof. Façade Zone 2 includes all façade areas above 36 feet. Establish total areas for Façade Zone 1, Façade Zone 2 and for the Adjusted Building Façade Area. Then identify the Material Types present

Attachment 3

on each façade, the corresponding Threat Factor of each material (for detailed types and associated threat factors, see the Bird Collision Deterrence Material Threat Factors developed by the American Bird Conservancy), and the total area of each Material Type. Lastly, establish the Factored Area for each Zone.

No more than 15% of the facade area in Façade Zone 1 can have a Threat Factor higher than 75. This area is quantified separately as the Hazardous Glazing Factor (HGF) in the calculator. However, more than 15% of the glazed area in Zone 2 may have a Factor higher than 75. All glazed corners or fly-through conditions must have a Threat Factor less than or equal to 25.

Table 1: General material types: threat potential

	Material Type
Greatest Threat Potential	Glass: Highly reflective and/ or completely transparent surface
	Glass: Reflective or transparent surface interrupted by a visible pattern based on the 2 x 4 Rule*.
	Glass: Reflective or transparent surface shielded by screens, shutters, or louvers where the resultant exposed glass satisfies the 2 x 4 Rule*.
	Glass: Translucent with matte or textured surface
Least Threat Potential	Opaque surface

*The 2 x 4 Rule is defined as a collision deterrence module based upon the physical profile of a bird in flight. Current research has established maximum module dimensions of 2” high x 4” wide.

Using the formulas below, achieve a maximum total building Bird Collision Threat Rating (BCTR) of 15 or less. The **Bird Collision Threat Rating Calculation Spreadsheet** can also be used.

For each Façade Zone, calculate the Factored Area:
[(Material Type 1 Threat Factor) x (Material Type Area)] + [(Material Type 2 Threat Factor) x (Material Type Area)]... = Façade Zone Factored Area

Determine the Adjusted Building Façade Area:
[(2 x Zone 1 Area) + Zone 2 Area] = Adjusted Building Façade Area

Calculate the total building Bird Collision Threat Rating by dividing the sum of Zone 1 and Zone 2 Factored Areas by the Adjusted Building Façade Area:
(Zone 1 Factored Area + Zone 2 Factored Area) / Adjusted Building Façade Area = Total Building BCTR

AND

Exterior lighting

Exterior building fixtures that are not necessary for safety, building entrances, and circulation shall be automatically shut off from midnight until 6 a.m. Manual override capability may be provided for occasional after-hours use.

In addition, meet these requirements for all exterior luminaires located inside the project boundary (except those listed under “Exemptions”), based on the following:

> The photometric characteristics of each luminaire when mounted in the same orientation and tilt as specified in the project design; and
>
> The lighting zone of the project property (at the time construction begins). Classify the project under one lighting zone using the lighting zones definitions provided in the Illuminating Engineering Society and International Dark Sky Association (IES/IDA) Model Lighting Ordinance (MLO) User Guide.

Do not exceed the following luminaire uplight ratings, based on the specific light source installed in the luminaire, as defined in IES TM-15-11, Addendum A.

Table 2. Maximum uplight ratings for luminaires

MLO lighting zone	Luminaire uplight rating
LZ0	U0
LZ1	U1
LZ2	U2
LZ3	U3
LZ4	U4

Exemptions from the exterior lighting requirements

The following exterior lighting is exempt from the requirements, provided it is controlled separately from the nonexempt lighting:

specialized signal, directional, and marker lighting for transportation;
government-mandated roadway lighting;
hospital emergency departments, including associated helipads; and
lighting for the national flag in MLO lighting zones 2, 3, or 4.

AND

Performance monitoring plan

Develop a three-year post-construction monitoring plan to routinely monitor the effectiveness of the building and site design in preventing bird collisions. Include methods to identify and document locations where repeated bird strikes occur, the number of collisions, the date, the approximate time, and features that may be contributing to collisions. List potential design solutions and provide a process for voluntary corrective action.

General Pilot Documentation Requirements

REGISTER FOR THE PILOT CREDIT

Participate in the LEEDuser pilot credit forum
Complete the feedback survey:

CREDITS 1-14

CREDITS 15-27

CREDITS 28-42

CREDITS 43-56

CREDITS 57-67

CREDITS 68-82

CREDITS 83--96

Credit Specific: BD+C

Building façade and site features

For materials on the building and site with a Threat Factor of 15 or below, submit a narrative describing why the materials, and building in general, are “bird-friendly.” Include a material list and supporting data.

A completed Bird Collision Threat Rating spreadsheet

Plan(s) and/or elevation(s) depicting the location of all materials and shading/screening devices used to comply with this credit

Applicable specification details on all materials and shading/screening devices used to comply with this credit. If a chosen material does not have a Threat Factor value, provide an estimated value with justification.

A narrative or statement acknowledging that both surface reflection and visibility of any surface 3 frit patterns have been taken into account.

Exterior lighting

Site lighting plan with boundaries, elements, location of fixtures, lighting zone, and applicable measurements

Luminaire schedule showing uplight ratings, nighttime off-time durations for a typical day, and manual override capability

Performance monitoring plan

A copy of the post-construction monitoring plan

Changes:

11/22/2016:
Edited the Credit Specific: BD+C submittals.

10/16/2015:
Expanded the applicability to all rating systems
Added site features (site structures with glass) to the credit
Adjusted and simplified the “Bird Collision Threat Rating” calculation
Simplified the lighting requirements
Adjusted the documentation based on the above changes to Requirements
Miscellaneous edits to the background information, for reference

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Fly-through conditions - situations in which glass elements provide any clear line of sight to birds, creating the illusion of a void leading to the other side; parallel glass elements or a convergence of glass sides creating a perpendicular, acute, or obtuse horizontal corner. Examples include glass bridges and walkways, outdoor railings, free-standing glass architectural elements and building corners where glass walls or windows converge.

About

Bird Collision Deterrence: Summary of Material Threat Factors
The American Bird Conservancy
October, 2011

Façade Material Type	Threat Factor
Opaque Material	0
Plexiglass	
Clear plexiglass with 5/64" thick black filament in horizontal arrangement spaced 1-3/16" apart (Evonik Paraglas or similar)	9
Translucent Plastics- all colors except clear	
Fiberglass panel, single pane or insulated (Kalwall or similar)	2
Corrugated fiberglass panel, single pane or insulated (Resolite or similar)	2
Glass	
Clear Glass, single pane or insulated	100
Glass with pattern on interior (#2) surface, single pane or IGU. 1/8" minimum line thickness or dot diameter. 2" maximum space between horizontal elements and 4" maximum space between vertical elements.	
<u>Examples:</u>	
Medium grey ceramic frit - 1/8" vertical lines spaced 1/2" apart, 20% coverage (Viracon V-948 or similar)	10
Dark grey ceramic frit - 1/8" horizontal lines spaced 1/2" apart, 20% coverage (Viracon V-901 or similar)	6
White ceramic frit - 1/8" dia. dots w/20% coverage (Viracon 5065 or similar)	41
White ceramic frit - 1/8" dia. dots w/40% coverage (Viracon 5006 or similar)	24
Glass with continuous frit on interior (#2) surface, single pane or IGU	25
Glass continuously etched (translucent level 4) on interior (#2) surface, single pane or IGU (Carvart or similar)	25
Clear wire glass with maximum 2" wire spacing, single pane or IGU (wire on outer pane).	20
Glass IGU with ½" thick white polycarbonate inner layer, 2" maximum diameter honeycomb (Panelite or similar)	25
Glass with pattern on exterior (#1) surface, single pane or IGU. 1/8" minimum line thickness or dot diameter. 2" maximum space between horizontal elements and 4" maximum space between vertical elements.	

Attachment 4

Façade Material Type	Threat Factor
Examples: (all Eckelt 4 Bird or similar)	
Orange ceramic frit- 1/4" vertical lines on 3½" centers	10
Orange & black ceramic frit- ½" alternating color vertical lines on 3½" centers	15
Black ceramic frit- 5/8" vertical "dot-screened" lines on 4" centers	10
Orange & black ceramic frit- 5/8" alternating color vertical "dot-screened" lines on 4" centers	10
Orange & black ceramic frit- 1" alternating color vertical "dot-screened" lines on 4 1/4" centers	10
Glass continuously etched (translucent level 4) on exterior (#1) surface, single pane or IGU (Carvart or similar)	5
Specialty Glass Products	
Coated glass with 1/16" UV reflective lines arranged in an irregular "webbed" pattern with 2" maximum spacing on interior (#2) surface, IGU (Ornilux Mikado or similar)	34
Translucent channel glass with cast "orange peel" or linear textured surface- 9" maximum face width (Pilkington Profilit or similar)	10
Glass block, 8" x 8" x 4" deep with "wavy" translucent appearance and polished surface (Pittsburgh Corning Decora or similar)	20
Glass block, 8" x 8" x 4" deep with grooved textured surface (Pittsburgh Corning Argus or similar)	10
Adhesive Films for Glass Retrofit	
Matte perforated vinyl signage film applied to outer (#1) surface (Scotchgal or similar)	2
Patterned film on interior (#2) surface. 1/8" minimum line thickness or dot diameter. 2" maximum space between horizontal elements and 4" maximum space between vertical elements.	see glass
Patterned film on exterior (#1) surface. 1/8" minimum line thickness or dot diameter. 2" maximum space between horizontal elements and 4" maximum space between vertical elements.	see glass
Adhesive decals applied to outer (#1) surface, spaced as indicated for patterned film above	10
Protective Screen External to Glass (fixed in place)	
Horizontal or vertical slats with 1/8" minimum face thickness and 2" maximum space between horizontal elements and 4" maximum space between vertical elements.	5

Façade Material Type	Threat Factor
Horizontal or vertical slats with 1/8” minimum face thickness. Slat depth and spacing ratio shall obscure 85% of glass when analyzed from all possible viewing angles	15
Expanded metal or perforated screens having elements with maximum spacing of 2" horizontal or 4" vertical	10
Welded wire mesh with minimum 1/8” dia. wire and 2” maximum space between horizontal elements and 4” maximum space between vertical elements.	10
Fixed copper or fiberglass insect screens installed 2” minimum outboard of glass	5
Poly or nylon netting with maximum 1” opening installed 6” minimum outboard of glass	5
Operable Shutters External to Glass	
Perforated hinged shutter with maximum opening 2” high x 4” wide.	15
Solid opaque hinged shutter	10
Roll-up solar screen- translucent polyester woven fabric	15

CALIFORNIA BUILDING STANDARDS COMMISSION

August 20, 2019
GREEN BUILDING
WORKSHOP
Agenda Item 6

DRAFT EXPRESS TERMS
CALIFORNIA GREEN BUILDING STANDARDS CODE, (CALGreen), PART 11, CALIFORNIA BUILDING STANDARDS CODE, TITLE 24, CALIFORNIA CODE OF REGULATIONS

- **Proposed code language for the 2019 Intervening Code Adoption Cycle**

LEGEND FOR EXPRESS TERMS

1. New California amendments: All such language appears <u>underlined</u>.
2. Repealed text: All such language appears in ~~strikeout~~.

A5.107 Bird-friendly building design (Voluntary Measures)

- **Statement of specific purpose, problem, rationale and benefits:**

  The California Building Standards Commission's (CBSC) is proposing to add Section A5.107 Bird-friendly building design, and adopt the following amendments that address “bird-friendly” standards for planning and design of buildings that specifically reduce the negative impact of bird deaths caused by collisions with buildings. CBSC is proposing concepts and alternative materials to vision glazing and other building features for designers and developers to use when designing buildings to reduce bird collision. By identifying and incorporating “bird friendly” strategies for designers and developers, the number of birds killed by collision with buildings will likely be reduce.

  History:

  At the conclusion of the 2007 legislative session, then-Governor Schwarzenegger vetoed three assembly bills of enrolled green building laws, writing "building standards should not be statutory" and recognizing the (CBSC) public process for the adoption of building regulations. He instructed CBSC to work with authoritative state agencies to develop and adopt green building standards for the 2010 building code cycle.

  Subsequent amendments to the Health and Safety Code established CBSC's authority for green building standards absent the authority of other state agencies, but also requiring it [CBSC] coordinate with other agencies' experts in standards' development. The administrative regulations also called for cost analysis and a recommendation for voluntary or mandatory status; and if voluntary, whether the standards should become mandatory over the next several years.

Attachment 5

The subject petition for voluntary bird-friendly building design standards relies on this authority and is proposed for non-residential buildings across California that can be adopted by local governments. While it is not intended to become mandatory within 3 years, future mandate is not precluded if the role of buildings in birds' decline becomes more critical.

The problem and rationale

The problem the petition sets out to address is the sheer number of bird deaths, numbering in the hundreds of millions, caused by collisions with buildings across the nation. Populations at risk are generally small perching birds, or passerines, that utilize various migratory routes from summer breeding grounds to winter feeding areas, and some residents. Also at risk are shorebirds and raptors. All of these birds perform environmental services for humans in controlling insect and rodent populations and in pollinating plants and spreading seed; and they give many human observers great pleasure to the tune of a $40 billion bird-watching industry.

What creates the greatest threat to these birds is building glass, which birds and humans alike find invisible. However, birds' poor depth- and contrast perception as well as the speed at which they approach building glass puts them at high risk for collision. Most building collisions occur in morning hours, but building lighting can create reflections and disrupt birds' orientations, causing some collisions to occur at night.

Material alternatives to vision glass for the treatment of building areas posing the greatest risk for collision do not need to be prohibitively expensive and can be cost-neutral. Portland, OR, in its bird friendly guidelines, notes that vision glass is the least energy efficient of façade materials, attributing an operating cost to it that is higher than that of patterned glass. A House of Representatives proposal for bird safe design for federal building (H.R. 919) was opined by a Congressional Budget Office to generate no premium in cost. Portland cites cost studies of a local library and a health center, comparing vision glass to fritted or UV-patterned glass and found increases of .05% and .03%, respectively, in the overall building costs. Independently, this author evaluated building materials for cost, finding that opaque materials like concrete or plaster are about half the cost of glass. Some designers of bird-friendly buildings note that costs are not significant if the features are incorporated early in design; retrofitting elements to shield glass will add cost, but economical options can be found.

Any cost impacts of bird-friendly design are further tempered by findings that lower floors typically are those that pose the most threat to at-risk birds, and incorporating specialty features is not necessary over an entire tall building.[13]

Statewide significance

Beginning in 2010, local jurisdictions in Toronto and San Francisco proposed ordinances to address this problem. Since then, many other California jurisdictions have done so, including San Jose and Oakland, and there is a good deal of variety in the policies. The United States Green Building Council (USGBC) initiated a pilot credit in its Leadership in Energy and Environmental

Design (LEED) green building rating system, which ABC has incorporated into a model ordinance.

Many of the birds addressed by California's various policies utilize the Pacific Flyway to travel from summer breeding grounds to winter feeding areas, flying from as far away as Siberia to South America and back, almost a billion birds of over 350 species. Many of these are waterfowl, managed for hunting and conservation; these ducks, geese and swans face habitat loss and other threats but are not typically at risk by building collisions. It is the smaller species that fly at lower altitudes that are in most danger, and they occur throughout California in migration, with some stopping to breed or winter here, within our communities.

With many species already in decline due to building sprawl and loss of habitat, the direct kills of often-healthy birds from collisions with building glass exacerbates their fragile existence. To paraphrase the Portland guidelines, consistent bird-friendly building design policy is necessary for "comprehensive urban sustainability strategy" to which a green building code is a major contributor.

A5.107 Bird-friendly building design. Building design elements and features considered "bird-friendly" shall comply with Sections A5.107.1 through A5.107.3.

A5.107.1 Glazing. No more than 10% of building facades to a height of 40 feet (12 m) or to that of the average height of local tree canopy, whichever is higher; and no more than 40% of facades above that shall be see-through glazing, reflective glazing or acrylic glass unless:

A. It is glazing that meets the energy requirements of the current California Energy Code and can include, but is not limited to, the following:

1. Etched or fritted glass with patterns of elements on the exterior having minimum dimensions of 3/8" diameter for dots or 1/8" width for stripes in a density of 2 inches (5.1 cm) maximum horizontally or 4 inches (10.2 cm) maximum vertically (the 2x4 rule).

Note: If the frit is on the interior of the glass, it can be effective if visible on a non-reflective exterior surface.

2. Interior or exterior glazing films with a pattern visible from the outside conforming to the 2x4 rule;

3. Laminated glass with 2x4 patterns, patterned UV coating or use of contrasting patterned UV-absorbing and UV reflective films; or

4. Glass block or channel glass; or

B. It is protected by exterior features that may include, but not be limited to:

1. Grilles or screens with openings no more than 2 inches (5.1 cm) maximum horizontally or 4 inches (10 cm) maximum vertically (the 2x4 rule) installed on the exterior side of glass.

2. Netting with 2x2 maximum openings.

3. Sunshades or louvers with 3 dimensional elements spaced a maximum vertical or horizontal 9"; or

4. Interior blinds with 2x4 patterns visible from the exterior during the day and shielding interior lighting at night, included as part of the construction contract.

A5.107.2 Special conditions. Vegetated roofs, site structures, comers and passageways, and facades of atria and courtyards shall comply with the following:

1. Railings and facades adjacent to vegetated roofs shall meet the standards in A5.107.1 (A) or (B) treated to a height of 1 unit per 4 units of perpendicular length of green roof.

2. Auxiliary buildings such as pavilions or gazebos and facades of atria or courtyards with water features or plants shall meet the standards of A5.107.1 (A) or (B); and

3. There shall be no see-through passageways and comers exposed to sky or habitat on the other side.

A5.107.3 Nighttime conditions. Nighttime building lighting at the top of the building, interiors of all floors, lobby and atria shall be controlled as follows:

A. Lighting is extinguished between March 15 and May 31 and between August 15 and October 31 from midnight to dawn.

B. Time-switch control devices or occupancy sensors are installed complying with the current *California Energy Code*, that can be programmed to turn off lights during those time frames.

Exception: Emergency lighting and lighting required for nighttime security.

A5.107.3.1 Systems or operation and maintenance manual. Include written recommendations that lighting is extinguished pursuant to Section A5.107.3 and janitorial services to the building are scheduled between sunrise and sunset.

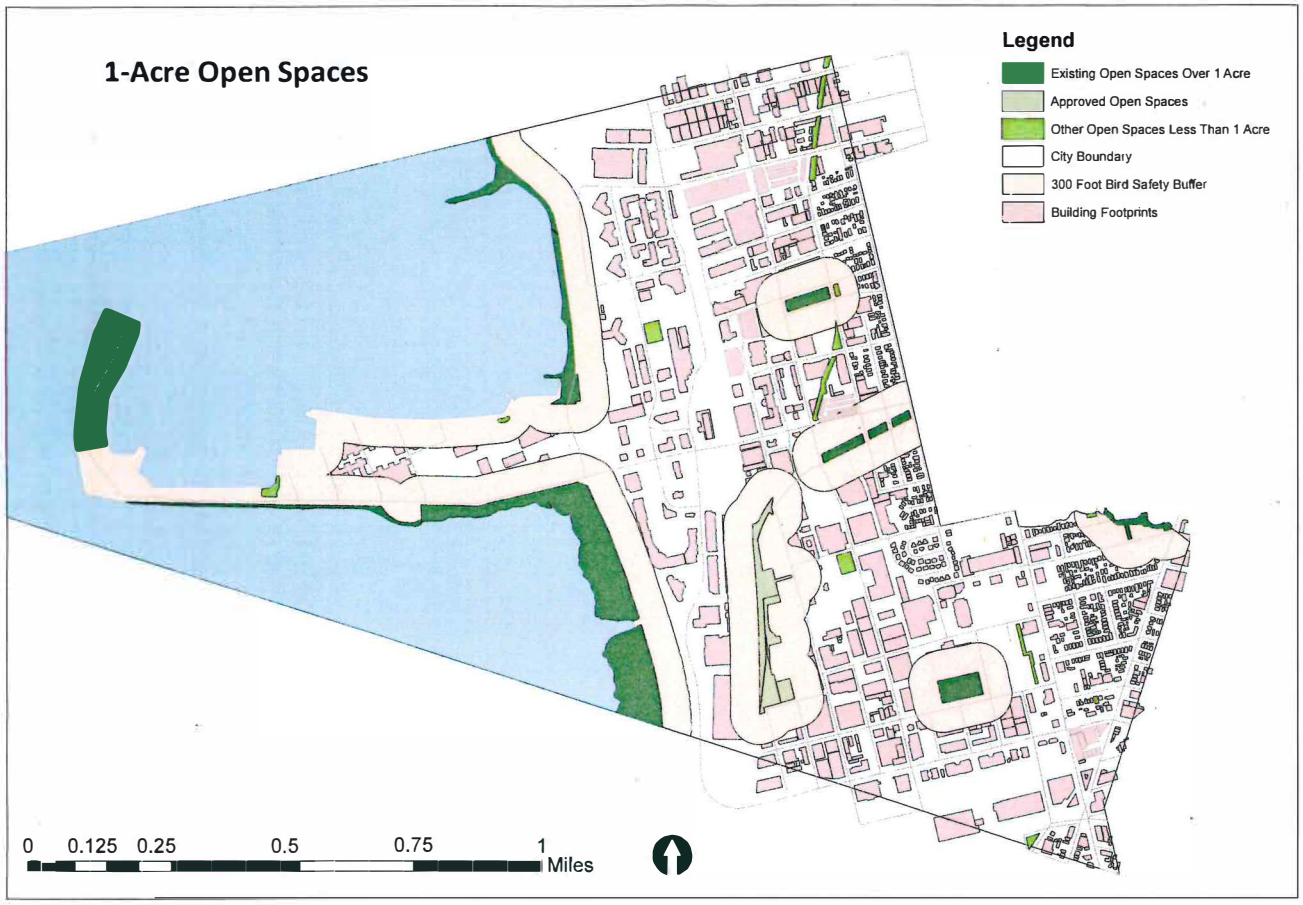
Existing Bird-Safe Building Standards

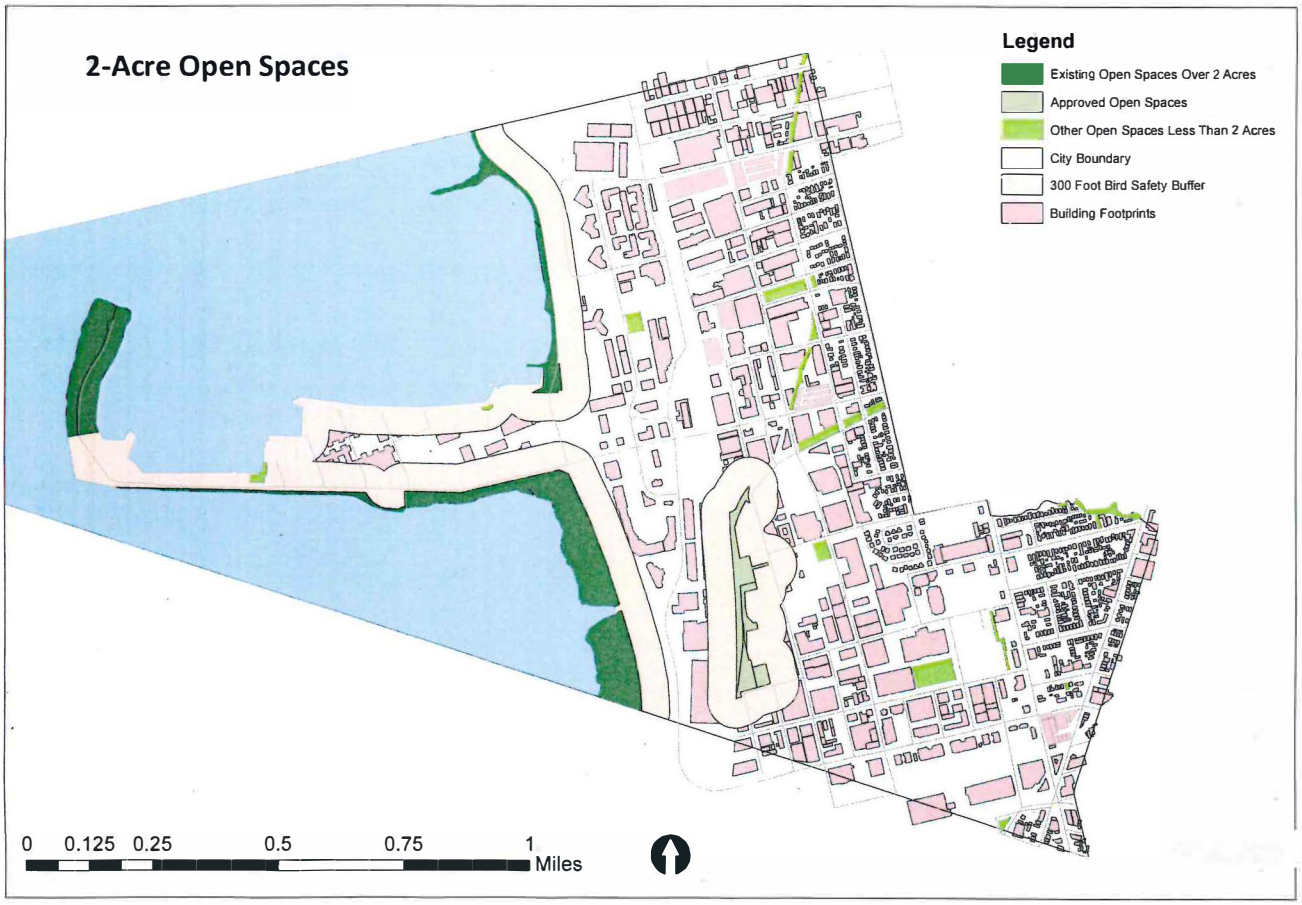
Year	Jurisdiction	Form	Applicability: Location	Window Treatment	Landscaping	Outdoor Lighting	Indoor Lighting	Free-standing glass
2011	Calgary	Design Guidelines	City-wide, especially near nature, first 4 levels, building corners	Visual markers, mute reflection, awnings, curtains or blinds, angled glass	Away from clear glass	Minimize near biding	Turn off, task lighting, close curtains or blinds, timers or motion sensors, day cleaning	
2011	San Francisco	Ordinance	Within 300 feet of 2-acre open space, 90% of glass on first 6 stories above ground or roof garden	Fritting, netting, stencils, frosted glass, screens meeting 2x4 rule: 1/4 inch wide 4 inches apart horizontally, or 1/8 inch wide 2 inches apart vertically	-	Minimize, shield, no up-lighting, no searchlights	-	Treat 100% city-wide, panes 24 square feet
2012	Portland, OR	Voluntary Measures	City-wide	Patterns, netting, screens, grilles, exterior shades, angled, tinting	-	Shielding, no up-lighting	Lights-out program	-
2013	Minnesota	Design Guidelines	New and renovated State buildings	Meet LEED Pilot Credit 55 Bird Collision Deterrence	-	Shield from sky, no light trespass	Lights-out program	Treat railings and glass-sided walkways
2013	Oakland	Building Permit review measures	Adjacent to 1-acre open space, 90% of glass on first 6 stories above ground or landscaping, vegetated atrium	Patterns, mullions , grilles, screens, netting, or louvres meeting 2x4 rule; awnings at glass recessed on all sides; and/or opaque glass	Not near clear glass, no mirrors	No illumination of architectural features, full cut-off shielding to reduce spill lighting, no beams during migration	Time switch controls; blinds, shades, or other window coverings	-
2013	Toronto, Ontario (updated from 2007)	Design Guidelines	City-wide	Visual markers: patterns, mullions, grilles, louvres, art; mute reflections: angled glass, screens, awnings, sunshades; vent grates meet 2x4 rule; treat 12 feet above green roof	No mirrors, vent grates meet 2x4 rule	Project light down - minimize upward and spill light	Automatic system to adjust levels and turn off unnecessary light, blinds. Draw blinds, clean in daytime	-
2014	Markham, Ontario	Design Guidelines	City-wide, first 52 feet above grade. 85% primary treatment, 15% secondary treatment	Primary: stripes, dots, patterns, net, frit, etch 2x4 rule. Secondary: mullions, blinds, shades, UV, tint, angle, vegetation placement.	Not near clear or reflective glass	No up-lighting	Off 11pm-6am, sensors	Apply treatment to courtyards, atria, and free-standing glass
2014	Sunnyvale	Voluntary Design Guidelines	Within 300 feet of 1-acre open space, no transparent or reflective glass in lower 60 feet; some apply everywhere	Reflectivity < 25%; louvres, awnings sunshades; fritted or etched glass; prevent water reflections; angled glass; avoid transparent building corners	Not at reflective glass, not funnel toward glass. Interior plants not near clear glass	No up-lighting or spot lights, shield all site fixtures	Install blinds or turn lights off at night, light task areas,	Avoid skyways or freestanding glass walls
2015	San Jose	Voluntary Measures	City-wide	Reduce large areas of transparent or reflective glass	Locate away from building, reduce behind glass	Reduce spotlights	Turn non-emergency lights off at night, especially during migration	-

Attachment 6

Existing Bird-Safe Building Standards - continued								
Year	Jurisdiction	Form	Applicability: Location	Window Treatment	Landscaping	Outdoor Lighting	Indoor Lighting	Free-standing glass
2015	Highland Park, IL	Bonus Option	Commercial, industrial, multi-family buildings	Meet LEED Pilot Credit 55 Bird Collision Deterrence.	-			
2016	Richmond	Ordinance	Adjacent to 2-acre open spaces, 2-story 10,000-square-foot buildings, 80% of first 60 feet from ground or roof garden	Fritting, netting, stencils, frosted glass, screens, meeting 2x4 rule. Reflectance < 10% (exception may be granted if frit, louvres or nets are used)	-	No up-lighting	-	15 feet by 30 feet, 24-square-foot panes city-wide, treat 100% of glass
2018	Santa Cruz	Standards	Within 300 feet of coast, parks, or natural areas, treat 90% of glazing within lower 40 feet	Fritting, patterns, nets, screens, UV patterns in some locatioins, or measures approved by ABC or a qualified proessional		No up-lighting		
2018	Alameda	Ordinance	Building 35 feet tall, façade 50% glass, panes 12 square feet: 90% of façade	Screens, blinds or curtains, opaque or translucent glass, mullions, patterns; with biologist approval layering, angled glass, louvers, overhangs, glass block, netting, grilles, embedded photo-voltaics, landscape placement	-	No searchlights, lasers, mercury vapor, or very intense lighting. Shielding, no light trespass, no floodlights. Security lighting can light 8 feet high on wall, use 100-watt bulbs	-	24 square-foot panes 90%: wind barriers, skywalks, balconies, greenhouses, rooftop appurtenances
2018	Portland, OR	Ordinance	Central City Plan District - within 1/4 to 1 mile of river. 90% of glass in facades with 30% glass in lower 60 feet and within 15 feet of roof garden	Fritting, etching, UV coating, or films on ground floor 2x4 rule; upper floors those or frosting or exterior appratus (screen, grille, net, louvers, fins or mullions) spacing = width.	-	-	-	Balcony railings, sky bridges, fences
2019	California Building Code	Proposed Voluntary Measures	90% of glass on lower 40 ft, and at green roof, gazebos, atria, avilions, passageways and corners; 60% above 40 ft	Pattern meeting 2x4 rule etched, fritted, film or laminated; or channel glass or glass block; or grilles, screens, netting, sunshades, blinds	-	-	Timers or sensors to turn lights off during migration except security and emergency lights.	-
2019	Berkeley	Proposed Ordinance	City-wide, 2+ stories, facades 50% glass, windows 8 sq ft +	Screens, blinds or curtains, opaque or translucent glass, mullions, patterns 2x4, UV, others with Director OK; recessed, angled or faceted glass, louvres, overhangs, awnings, glass block, netting, grilles, photovoltaics, landscape placement with biologist OK	-	-	-	24 square-foot panes - walls, wind barriers, skywalks, balconies, greenhouses, rooftop appurtenances

Open Spaces with Vegetation or Water and 300-foot Buffer





Attachment 7

Inspiring people to protect
Bay Area birds since 1917

October 31, 2019

Emeryville City Council
1333 Park Avenue
Emeryville, CA 94608

Re: November 5, 2019 Emeryville Planning Commission Bird Safe Building Standards

Dear City Council Members;

Birds provide valuable and important ecological services and are appreciated by residents and visitors with over 46 million bird watchers representing an $80 Billion industry in the US. Over 185 bird species have been documented in Emeryville. Recently you may have read about the study that reported over the past 50 years revealing a dramatic loss of at least 3 Billion birds in the US and Canada. [i] The Emeryville staff report references the US Fish and Wildlife Service report that states a million birds die each day as a result of bird-building collisions. Birds do not recognize glass as a solid to avoid but there are many solutions. Other cities have implemented bird safe building ordinances and this has not been a problem. On September 12 of this year Berkeley's Community Environmental Advisory Commission approved a bird safe building and dark skies ordinance and it is going to their City Council. This is a call to action for you today. There is positive action to prevent bird-building collisions and many of the solutions are energy efficient.

Over a year ago Emeryville City Council requested Planning evaluate bird safe building design guidelines. The staff report provides information on this issue, peer-reviewed scientific studies on the issue of bird building collisions and negative impacts from artificial night lighting. Golden Gate Audubon offers free professional-level bird friendly building design courses at local architect offices, providing them with an American Institute of Architects Continuing Education Unit. Architects are creative problem solvers and there are many solutions. Many of these solutions also save money and natural resources through their thermal regulating qualities. Effective solutions can vary from fritted or UV treated glass to louvers to insect screens, artistic etching, marketing films, grillwork and more. The Emeryville bird safety ordinance with a dark skies ordinance amending the Planning Regulations and applying city wide will save natural resources and birds.

GOLDEN GATE AUDUBON SOCIETY
2530 San Pablo Avenue, Suite G Berkeley, California 94702
phone 510.843.2222 *fax* 510.843.5351 *web* www.goldengateaudubon.org

Thank you for taking strong and positive action in support of the Bird Safety and Dark Skies Ordinance for all of Emeryville. **Golden Gate Audubon strongly supports an amendment to the Planning Regulations which would apply city wide as an ordinance**. Bird Safe Building Standards would bolster Emeryville's goals of sustainability and design excellence.

Please feel free to contact me if you have any questions on bird safe buildings.

Sincerely,

Noreen Weeden

Noreen Weeden
Golden Gate Audubon
510-301-0570 cell phone
nweeden@goldengateaudubon.org
www.goldengateaudubon.org

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[i] Decline of the North American avifauna Kenneth V. Rosenberg1,2*, Adriaan M. Dokter1 , Peter J. Blancher3 , John R. Sauer4 , Adam C. Smith5 , Paul A. Smith3 , Jessica C. Stanton6 , Arvind Panjabi7 , Laura Helft1 , Michael Parr2 , Peter P. Marra8 † See https://www.sciencemag.org/news/2019/09/three-billion-north-american-birds-have-vanished-1970-surveys-show

RESOLUTION CPC NO. ORD20-002

A RESOLUTION OF THE PLANNING COMMISSION OF THE CITY OF EMERYVILLE RECOMMENDING CITY COUNCIL ADOPTION OF AN ORDINANCE ADDING ARTICLE 8 OF, AND AMENDING ARTICLE 7 TO, CHAPTER 4 OF TITLE 9 OF THE EMERYVILLE MUNICIPAL CODE REGARDING BIRD-SAFE BUILDING DESIGN

WHEREAS, on October 2, 2018, the City Council directed that the Planning Commission study bird-friendly design standards; and

WHEREAS, on September 26, 2019, the Planning Commission held a study session and recommended adopting standards in the Planning Regulations to apply citywide, which protect birds; and

WHEREAS, on November 5, 2019, the City Council held a study session and directed staff to prepare an ordinance adopting standards in the Planning Regulations to apply citywide, which protect birds; and

WHEREAS, on April 23, 2020, the Emeryville Planning Commission held a duly and properly noticed public hearing on the proposed ordinance ("Ordinance"); and

WHEREAS, the Planning Commission has reviewed and considered the staff report and attachments thereto, all public comments, and the proposed amendments to Title 9 of the Emeryville Municipal Code, as set forth below, and the applicable provisions of the Emeryville Municipal Code; now therefore, be it

RESOLVED, that the Planning Commission makes the following findings, pursuant to Section 9-7.1305 of the Emeryville Municipal Code:

(a) The proposed amendment is consistent with the General Plan.

The Ordinance is consistent with General Plan goal CSN-G-5 "Preservation and protection of natural resources" because it will protect birds. The Ordinance is also consistent with General Plan goal CSN-G-1 "Protection of public health" because birds control insects and rodents that spread diseases.

(b) The proposed amendment is necessary for public health, safety and welfare or will be of benefit to the public.

The Ordinance is necessary for public health, safety and welfare to protect birds from window collisions and other building injuries. Birds promote human health by controlling insects and rodents that spread diseases. Birds promote human welfare by providing beauty and songs for people to enjoy. Protection of birds will also benefit the public because birds pollinate plants and spread seeds.

(c) The proposed amendment has been reviewed in compliance with the requirements of the California Environmental Quality Act.

The Ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) under the "common sense exemption" at CEQA Guidelines Section 15061(b)(3) because it can be seen with certainty that there is no possibility that the amendment may have a significant effect on the environment.

(d) For a change to the Zoning Maps, that the subject property is suitable for the uses permitted in the proposed zone in terms of access, size of parcel, relationship to similar or related uses, and other relevant considerations, and that the proposed change of zoning district is not detrimental to the use of adjacent properties.

No changes to the Zoning Map in Figure 3.103(a) or the Zoning Overlay Map in Figure 9-3.103(b) of the Planning Regulations are proposed.

and be it further

RESOLVED, that the Planning Commission hereby recommends that the City Council adopt an Ordinance amending Title 9 of the Emeryville Municipal Code as follows:

ADDING ARTICLE 8 TO CHAPTER 4 OF TITLE 9 OF THE EMERYVILLE MUNICIPAL CODE

Article 8 of Chapter 4 of Title 9 of the Emeryville Municipal Code is hereby added to read as follows:

ARTICLE 8. BIRD-SAFE BUILDINGS

9-4.801 Purpose.

The purpose of this Article is to reduce the risk of bird-to-building collisions.

9-4.802 Applicability.

The bird-safe building standards apply to the following types of projects when such projects require a building permit:

(a) **New Construction**. New buildings, additions, and renovations involving new glass or other rigid transparent material.

(b) **Window Replacement**. Any replacement window, glass door, or other rigid transparent material.

(c) **Glass Structures**. Any new or replacement structure that has transparent glass or rigid transparent walls, including but not limited to freestanding glass walls, wind barriers, skywalks, balconies, greenhouses, gazebos, pavilions, passageways, and rooftop appurtenances.

The bird-safe glazing requirement must be met on any window or contiguous glazed segment (area within mullions and/or frames) with an area of 12 square feet or more.

9-4.803 Bird-Safe Glazing Requirement.

At least 90% of the glazing on any building façade or glass structure, and all glass near plants or water features, shall include features that enable birds to perceive the glass as a solid object. The requirement can be satisfied by using one or more of the following treatments:

(a) External screens installed permanently over glass such that the glass does not appear reflective.

(b) Translucent or opaque glass, or transparent or opaque film applied to glass.

(c) Glass covered with patterns such as dots, stripes, images, art, or abstract patterns. Such patterns may be etched, fritted, stenciled, silk-screened, or applied to the glass as films or decals, or another method of permanently incorporating the patterns into or onto the glass. Elements of the patterns must be either at least 1/8 inch tall and separated by no more than 2 inches vertically, or at least 1/4 inch wide and separated by no more than 4 inches horizontally, or both (the 2 by 4 rule).

(d) Weatherproof grates, netting or cords mounted outside of the glass, near but not touching the glass, meeting the 2-by-4 rule.

(e) Grooved glass block.

(f) Other glazing treatments providing an equivalent level of bird safety and approved by the Planning Director.

9-4.804 Alternative Compliance.

As an alternative to meeting Section 9-4.803 of this article, Bird-Safe Glazing Requirement, an applicant may propose building and fenestration designs that will minimize bird collisions and achieve an equivalent level of bird safety. The applicant shall submit a bird collision reduction plan along with the project application. The bird collision reduction plan shall be prepared by a

qualified biologist. Design solutions may include but need not be limited to the following techniques, singularly or in combination:

(a) Layering and recessing of glazed surfaces.

(b) Angled or faceted glazing that minimizes reflectivity and transparency.

(c) Louvres or grates not meeting the 2-by-4 rule.

(d) Overhangs or awnings

(e) Clear (non-grooved) glass block

(f) Grilles that allow birds to perceive the grilles, together with the glass behind them, as solid.

(g) Glass embedded with photovoltaic cells.

(h) Placement of landscaping in such a way as to minimize bird collisions, including but not limited to placing outdoor plants directly against windows.

9-4.805 Interior Lighting.

(a) Non-residential spaces shall have automatic light shutoff systems using timers, photo sensors, motion sensors, or a combination of sensors.

(b) Shades, blinds, curtains, or other window coverings for all windows shall be included as part of the construction project for which the building permit is issued.

9-4.806 Site Design.

(a) No mirrors shall be placed in or near planted areas or water features, or in locations where they would reflect trees, plants, or water.

(b) Vent grates shall meet the 2-by-4 rule as described in Section 9-4.803(c).

AMENDING SECTION 9-4.705 OF ARTICLE 7 OF CHAPTER 4 OF TITLE 9 OF THE EMERYVILLE MUNICIPAL CODE

Section 9-4.705 of Article 7 of Chapter 4 of Title 9 of the Emeryville Municipal Code is hereby amended as follows, with deletions shown in ~~strikeout~~ type and additions shown in <u>double-underlined</u> type.

9-4.705 Outdoor Lighting and Illumination.

(a) **Applicability.** The provisions of this Section shall apply to all new and replacement outdoor lighting devices, not including signs.

(b) **Exemptions.** The following types of light fixtures shall be exempt from the provisions of this Section:

(1) Temporary emergency lighting needed by police, fire, and other emergency services.

(2) Temporary lights used for holiday decorations.

~~(3) Spotlights, search lights, and lasers for special events subject to a temporary use permit. Restrictions on such lighting may be included in the conditions of approval of the temporary use permit.~~

(c) **General Regulations.**

(1) All exterior lighting shall be designed to confine direct rays to the premises. No light fixture shall emit any direct light above a horizontal plane through the fixture. No spillover beyond the property line shall be permitted, except onto public thoroughfares; provided, however, that no such light shall cause a hazard to motorists.

(2) Exterior light fixtures attached to a building shall be designed as an integral part of the building and may highlight building forms and architectural details.

(3) Lighting that highlights architectural features or art shall be limited to one 100-watt bulb or 20-watt equivalent LED, and emit less than 1,600 lumens, per fixture.

(~~3~~4) All exterior lighting on a nonresidential property shall be on a time clock or photo-sensor system so as to be turned off during daylight hours and during any hours when the facility is not in use and the lighting is not required for security.

(5) Security wall lighting shall be limited to 8 feet above ground level.

(~~4~~6) All lighting shall meet any applicable energy efficiency requirements of the Building Regulations in Title 8.

(d) **Parking Lot Illumination**. Except for those serving four or fewer residential units, all open parking areas shall be provided with exterior lighting as required by Section 9-4.406(k).

(3) **Prohibitions.** Outdoor lighting fixtures shall not include flickering or flashing lights, spotlights, searchlights, lasers, beams, floodlights, or mercury vapor lights.

APPROVED by the Planning Commission of the City of Emeryville at a regular meeting held on Thursday, April 23, 2020, by the following vote:

AYES:_____

NOES:_____**ABSTAINED:**_____

EXCUSED:_____**ABSENT:**_____

_____
CHAIRPERSON

APPROVED AS TO FORM:

Charles S. Bryant
_____
RECORDING SECRETARY

/s/ Andrea Visveshwara
_____
ASSISTANT CITY ATTORNEY