



Petition Initiation Request

Regulations for Bird Safe Buildings

PLANNING DIVISION
COMMUNITY & ECONOMIC DEVELOPMENT

To: Salt Lake City Planning Commission

From: Wilf Sommerkorn Planning Director;
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Date: June 5, 2014

Re: Comments from Staff on creating regulations for Bird Safe Buildings

RECOMMENDATION:

The Planning Division feels that, after some preliminary research and analysis of this issue, while there may be some benefits to the environment, this would be a relatively low priority when considered with the workload the planning staff currently has. This is based on the preliminary research that shows the potential negatives may well outweigh the positives of such regulations.

The negatives include:

- To be effective, the regulations would have to apply to virtually every building in the City.
- An ordinance would increase the resources necessary to review development applications and building permits. This additional resource would most likely be in the form of time as each permit would require additional staff review.
- Creating a location based ordinance, such as an overlay, to address buildings close to large areas where they may be a high concentration of birds, increases the complexity of the zoning ordinance and makes it more difficult to use.
- Adding requirements is likely to increase the cost of construction.
- Adding requirements may have a negative impact on historic structures.
- It would be difficult to enforce an ordinance for structures/alterations that may not require a building permit, such as accessory buildings less than 180 square feet in size including green houses.
- There is no research that staff could find that is specific to Salt Lake City to determine if bird deaths caused by striking buildings are an issue. Planning Division staff does not have the expertise or resource available to perform such a study.

However, if the Planning Commission determines that it is appropriate to initiate such a petition, the Planning Division recommends that the scope of the regulations apply to portions of buildings less than 60 feet in height, in locations that are adjacent to open spaces larger than 2 acres in size and that historic buildings, single family homes, buildings with less than 50% of the façade in glazing and

ground floor glazing be exempt from the regulations. Additional regulations could prohibit mirrored glass as a window or façade treatment. Regulations related to lighting could be addressed through the lighting standards ordinance.

BACKGROUND/DISCUSSION: Commissioner Angela Dean initiated the discussion to the Planning Commission to consider initiating a petition to create regulations that require bird safe buildings in Salt Lake City. The Planning Commission discussed this at its April 23, 2014 meeting. At the April 23, 2014 meeting the Commission requested that the Planning Staff provide comment at the meeting on May 28, 2014 relating to the idea of the regulations, whether it is a zoning type of issue, what other City's have done the timing of working on the petition if it is initiated and other such factors. Due to some personal matters for the planning director, we have not been able to schedule this for the Commission's consideration until the June 11 meeting.

RESEARCH

Bird Safe Buildings

Bird friendly zoning regulations are intended to reduce the number of bird deaths associated with birds flying into buildings. For buildings, glass tends to be the primary issue. The reflectivity, transparency, amount of glass (the strongest factor), and glass relative to building height and massing tend to be the primary factors in birds colliding with buildings. Other factors that are believed to contribute to bird collisions include lighting, the macro and micro setting, migration patterns, building features and weather conditions.

Is this an issue?

Studies suggest that somewhere between 365 million and 988 million birds are killed every year in collisions with buildings. This is considered to be the second leading cause of death for birds. Cats are the number 1 cause of deaths among birds. Based on the range, it is clear that it is difficult to determine how many birds die every year from colliding with buildings.

Studies also suggest that bird deaths are more frequent in shorter buildings (less than 11 stories). Researchers suggest that this is because tree canopies do not reach as high as taller buildings and are usually within 60 feet of the ground. In the United States, it is estimated that there are 21,000 buildings over 11 stories in height, while there are 15.1 million low rise buildings and 123 million single family homes. An 11 story building is approximately 160 feet in height. In Salt Lake City, there are 40 buildings that exceed 160 feet in height. The rest of the structures in Salt Lake City, including all of the approximately 39,000 single family homes, are within the height range where most bird collisions occur.

Pros and Cons

The benefits to enacting bird friendly building standards include:

- Less bird deaths caused by the built environment
- More birds in the urban environment
- Increased biodiversity

Given the relative scale of buildings in Salt Lake City, there are also some cons.

- The majority of bird collisions happen within a height range that correlates to the heights of virtually all buildings in the City.
- Reducing glazing at the ground level conflicts with a number of City policies, goals and regulations about activating pedestrian areas.
- Adding regulations citywide could result in increased costs to new buildings, major additions or renovations.
- It could be difficult to establish a threshold of when new regulations kick in.

- Replacing glazing or adding bird friendly screening/grids to buildings in historic districts and individually listed historic buildings could negatively impact the historic character of a structure or the district within which the structure is located.
- Adding new regulations increases the review time for performing zoning reviews or requires additional resources.
- Adopting new regulations would make every building subject to the standards non complying until the building undergoes major renovations or is replaced by a new building.

Review of Studies

According to the “Standards for Bird-Safe Buildings” publication created by the San Francisco Planning Department, one of the most extensive monitoring programs of bird-building collisions in a dense city is the Audubon’s Project Safe Flight in Manhattan. Over 5,400 collisions were documented between 1997 and 2008. An analysis of the data determined the critical contributing factors for the structure with the largest number of bird fatalities:

- The combination of open space, vegetation and large windows (greater than 3 ft by 6 ft) are more predictive of bird death than building height.
- The frequency of collisions is highest along facades that have lush exterior vegetation and either reflective or transparent windows.
- The majority of collisions occurred during the daytime and involved migrant species.
- High rise buildings and night lighting presented less risk than windows adjacent to open spaces one hectare or greater in size.
- The majority of collisions are likely due to high collision sites that feature glass opposite vegetation.
- Urban mortalities may be higher than previously thought. Non-urban studies estimated that high collision sites would have about 30 collisions per year. At the Manhattan sites, well over 100 collisions were recorded per year.
- The most dangerous building in this study was a 6 story office building adjacent to open spaces.

The below graphic taken from the Standards for Bird-Safe Buildings publication cited above, indicates that the bird-building collision zone is primarily up to 60 feet above the ground elevation. The graphic explains the migration characteristics of birds and when they are most likely to collide with buildings.

Spotlight on Building Height and Bird Migration

Upper Levels:

NOCTURNAL MIGRANTS AND FLEDGLING RAPTORS

While birds' migratory paths vary and with some birds traveling more than 10,000' high, radar tracking has determined that approximately 98% of flying vertebrates (birds and bats) migrate at heights below 1,640 feet during the spring, with 75% flying below that level in the fall. Today, many of the tallest buildings in the world reach or come close to the upper limits of bird migration. Storms or fog, which cause migrants to fly lower and can cause disorientation, can put countless birds at risk during a single evening.



2000'

1600'

Mid-Levels:

PRIMARY MIGRATION ZONE FOR SMALL BIRDS

This is the primary migration height for small birds. Migrating birds descend from migration heights in the early morning to rest and forage for food in tree canopies and on the ground. Migrants also frequently fly short distances at lower elevations in the early morning to correct the path of their migration.

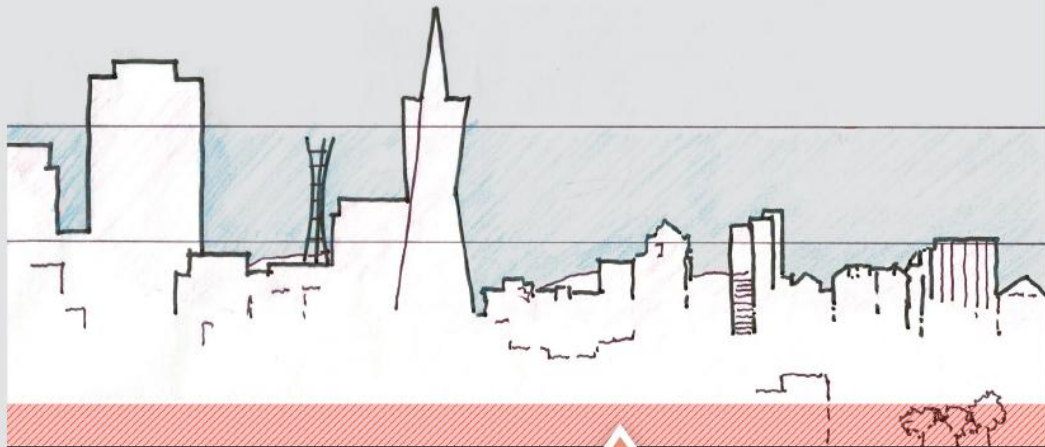


1000'

500'

300'

60'



Bird Building Collision Zone:

INCREASED COLLISIONS FOR LOCAL BIRDS AND MIGRANTS SEARCHING FOR FOOD AND SHELTER

The most hazardous areas of all buildings, especially during the day and regardless of overall height, are the ground level and bottom few stories. Here, birds are most likely to fly into glazed façades that reflect surrounding vegetation, sky, and other attractive features.

What Other Communities are Doing

Several cities have incorporated standards in their zoning codes or building codes to make buildings more bird friendly.

Chicago: In 2008, Chicago became the first City to require all new buildings and major renovations to incorporate design elements to reduce the likelihood of bird collisions.

Toronto: Toronto has mandatory regulations that apply to nearly all new construction. The City utilizes an incentive program that is intended to encourage bird friendly design to be incorporated into new buildings. The program recognizes a building as bird friendly if they include certain guidelines and the owner can use that designation as a marketing tool to attract an increasingly environmentally concerned list of tenants.

Minnesota: Requires all state owned and leased buildings to turn lights out at night.

Michigan: Asks all building owners to turn lights out at night during the spring and fall migration

San Francisco: San Francisco adopted bird friendly regulations in 2011. These regulations are based on 2 types of hazards: Location related hazards and building feature related hazards.

A location related hazard is any building that is located within 300 feet of an identified "Urban Bird Refuge." An Urban Bird Refuge is defined as any open space 2 acres or larger in size that is dominated by vegetation, forest, meadow, grassland, water or wetlands or rooftop gardens larger than 2 acres. Within this area, new buildings, additions or when 50% or more of the glazing is replaced are required to:

- Apply bird friendly façade treatments using visual noise, plastic films, coatings or tints, or screens, scrim, or fritting on 90% of the glazing in the building. It is encouraged that the 10% of untreated windows be placed on the ground floor and at building entrances to fulfill the City's goals of enhancing the visual interest for pedestrians.
- Uplighting is prohibited and all lighting shall be screened so light is directed down. Event searchlights and spotlights are prohibited.
- Horizontal wind generators are prohibited and vertical access wind generators are prohibited unless they appear solid.

A feature related hazard is a hazard that poses a risk for birds that are in flight regardless of the location of the building. These types of hazards include free-standing glass walls, skywalks/sky bridges, greenhouses on rooftops and balconies that have unbroken glazing segments 24 square feet and larger in size. These features are not prohibited, but do require certain treatments in all new buildings and on additions to new buildings. 100% of building feature must be treated. The treatments are similar to those listed for glazing in the location related hazard discussion.

San Francisco exempts certain buildings from these requirements:

- Historic buildings. However, reversible treatments are encouraged. Reversible treatments include netting, glass films, grates and screens.
- Residential buildings less than 45 feet in height that have an exposed façade that is less than 50% glass are exempt from new or replacement glazing, but have to comply with the feature related and wind requirements.
- Residential buildings less than 45 feet in height that have more the 50% of an exposed façade in glazing must treat the glazing so that 95% of the windows over 24 square feet are treated.

- The zoning administrator can waive the requirements upon recommendation of a qualified biologist.

Workload and Priority Projects

Although Commission Woodhead is accurate when she stated that the issue of whether or not to initiate the petition should not be based on the current workload, the Planning Division prioritizes its workload based on many factors.

- Privately generated petitions are given priority
- Petition are also initiated by the City Council and the Mayor. The major staff time on City generated petitions at this time include work on four master plans, seven proposed local historic districts, two sets of design guidelines, proposed rezoning petitions to implement small neighborhood business zones and the West Salt Lake Master Plan as well as various other types of regulations.

Please contact me if you have any questions or need additional information.

Thank You

ATTACHMENT A
Special Exceptions Authorized

21A.52.030: SPECIAL EXCEPTIONS AUTHORIZED:  

A. In addition to any other special exceptions authorized elsewhere in this title, the following special exceptions are authorized under the provisions of this title.

1. Accessory building height, including wall height, in excess of the permitted height provided:
 - a. The extra height is for architectural purposes only, such as a steep roof to match existing primary structure or neighborhood character.
 - b. The extra height is to be used for storage of household goods or truss webbing and not to create a second level.
 - c. No windows are located in the roof or on the second level unless it is a design feature only.
 - d. No commercial use is made of the structure or residential use unless it complies with the accessory dwelling unit regulations in this title.
2. Accessory structures in the front yard of double frontage lots, which do not have any rear yard provided:
 - a. The required sight visibility triangle shall be maintained at all times.
 - b. The structure meets all other size and height limits governed by the zoning ordinance.
3. Additional height for fences, walls or similar structures may be granted to exceed the height limits established for fences and walls in chapter 21A.40 of this title if it is determined that there will be no negative impacts upon the established character of the affected neighborhood and streetscape, maintenance of public and private views, and matters of public safety. Approval of fences, walls and other similar structures may be granted under the following circumstances subject to compliance with other applicable requirements:
 - a. Exceeding the allowable height limits; provided, that the fence, wall or structure is constructed of wrought iron, tubular steel or other similar material, and that the open, spatial and nonstructural area of the fence, wall or other similar structure constitutes at least eighty percent (80%) of its total area;
 - b. Exceeding the allowable height limits within thirty feet (30') of the intersection of front property lines on any corner lot; unless the city's traffic engineer determines that permitting the additional height would cause an unsafe traffic condition;
 - c. Incorporation of ornamental features or architectural embellishments which extend above the allowable height limits;
 - d. Exceeding the allowable height limits, when erected around schools and approved recreational uses which require special height considerations;
 - e. Exceeding the allowable height limits, in cases where it is determined that a negative impact occurs because of levels of noise, pollution, light or other encroachments on the rights to privacy, safety, security and aesthetics;
 - f. Keeping within the character of the neighborhood and urban design of the city;
 - g. Avoiding a walled-in effect in the front yard of any property in a residential district where the clear character of the neighborhood in front yard areas is one of open spaces from property to property; or
 - h. Posing a safety hazard when there is a driveway on the petitioner's property or neighbor's property adjacent to the proposed fence, wall or similar structure.

4. Additional building height in commercial districts is subject to the standards in chapter 21A.26 of this title.
5. Additional foothills building height, including wall height, shall comply with the standards in chapter 21A.24 of this title.
6. Additional residential building height, including wall height, in the R-1 districts, R-2 districts and SR districts shall comply with the standards in chapter 21A.24 of this title.
7. Any alternative to off street parking not listed in section 21A.44 of this title intended to meet the number of required off street parking spaces.
8. Barbed wire fences may be approved subject to the regulations of chapter 21A.40 of this title.
9. Conditional home occupations subject to the regulations and conditions of chapter 21A.36 of this title.
10. Dividing existing lots containing two (2) or more separate residential structures into separate lots that would not meet lot size, frontage width or setbacks provided:
 - a. The residential structures for the proposed lot split already exist and were constructed legally.
 - b. The planning director agrees and is willing to approve a minor subdivision application.
 - c. Required parking equal to the parking requirement that existed at the time that each dwelling unit was constructed.
11. Use of the front yard for required parking when the rear or side yards cannot be accessed and it is not feasible to build an attached garage that conforms to yard area and setback requirements, subject to the standards found in chapter 21A.44 of this title.
12. Grade changes and retaining walls are subject to the regulations and standards of chapter 21A.36 of this title.
13. Ground mounted central air conditioning compressors or systems, heating, ventilating, pool and filtering equipment located in required side and rear yards within four feet (4') of the property line. The mechanical equipment shall comply with applicable Salt Lake County health department noise standards.
14. Hobby shop, art studio, exercise room or a dressing room adjacent to a swimming pool, or other similar uses in an accessory structure, subject to the following conditions:
 - a. The height of the accessory structure shall not exceed the height limit established by the underlying zoning district unless a special exception allowing additional height is allowed.
 - b. If an accessory building is located within ten feet (10') of a property line, no windows shall be allowed in the walls adjacent to the property lines.
 - c. If the accessory building is detached, it must be located in the rear yard.
 - d. The total covered area for an accessory building shall not exceed fifty percent (50%) of the building footprint of the principal structure, subject to all accessory building size limitations.
15. In line additions to existing residential or commercial buildings, which are noncomplying as to yard area or height regulations provided:

- a. The addition follows the existing building line and does not create any new noncompliance.
 - b. No additional dwelling units are added to the structure.
 - c. The addition is a legitimate architectural addition with rooflines and exterior materials designed to be compatible with the original structure.
16. Operation of registered home daycare or registered home preschool facility in residential districts subject to the standards of chapter 21A.36 of this title.
 17. Outdoor dining in required front, rear and side yards subject to the regulations and standards of chapter 21A.40 of this title.
 18. Razor wire fencing may be approved subject to the regulations and standards in chapter 21A.40 of this title.
 19. Replacement or reconstruction of any existing noncomplying segment of a residential or commercial structure or full replacement of a noncomplying accessory structure provided:
 - a. The owner documents that the new construction does not encroach farther into any required rear yard than the structure being replaced.
 - b. The addition or replacement is compatible in design, size and architectural style with the remaining or previous structure.
 20. Underground building encroachments into the front, side, rear and corner side yard setbacks provided the addition is totally underground and there is no visual evidence that such an encroachment exists.
 21. Window mounted refrigerated air conditioner and evaporative swamp coolers located in required front, corner, side and rear yards within two feet (2') of a property line shall comply with applicable Salt Lake County health department noise standards.
 22. Vehicle and equipment storage without hard surfacing in the CG, M-1, M-2 or EI districts, subject to the standards in 21A.44 of this title.