

GROUP 4, ITEM F

AIRPORT WILDLIFE HAZARD PROTECTION ZONE REQUIREMENTS

AMENDMENT SUMMARY

- Issue:** DCD staff reviews and approves a significant number of deviations from lake bank slope and planted littoral shelf requirements for lakes associated with development within the 10,000-foot airport wildlife hazard protection zone in a manner consistent with FAA Advisory Circular (AC) 150/5200-33B and Lee Plan Policy 47.2.5. While these deviations typically occur through a planned development zoning action, the only process to deviate from these requirements in a conventional zoning district is through a public hearing variance, which results in a longer permitting process for development on conventionally-zoned properties within the airport wildlife hazard protection zones.
- Solution:** Staff proposes changes to the lake bank slope and planted littoral shelf requirements within airport wildlife hazard protection zones to codify relief that is customarily approved through zoning actions. The proposed changes:
- 1) Allow lake bank slopes within the airport wildlife hazard protection zone to be designed with a maximum slope of 4:1 consistent with FAA guidelines;
 - 2) Prohibit planted littoral shelves within the airport wildlife hazard protection zone consistent with FAA guidelines; and
 - 3) Require the number of littoral plants calculated for a planted littoral shelf in accordance with LDC requirements to be converted and substituted with wetland trees.
- Outcome:** Streamlines the permitting process for development within the airport wildlife hazard protection zone in a manner consistent with FAA guidance and the Lee Plan.

Sec. 10-104. Deviation and variances.

Staff note: LDC Section 10-104(a)(12) references the changes recommended in LDC Section 10-418(5).

- (a) *Provisions where deviations are authorized.* The Director is hereby authorized to grant deviations from the technical standards in the following sections of this chapter:
- (1) Section 10-261 (refuse and solid waste disposal facilities);
 - (2) Section 10-283 (access streets);
 - (3) Section 10-285 (intersection separations);
 - (4) Section 10-296(b), Table 2 (right-of-way width specifications for streets);
 - (5) Section 10-296(e) (wearing surface, base, subgrade, cross section widths);
 - (6) Section 10-296(d)(4) (drainage);
 - (7) Section 10-296(d)(11), Table 3 (pavement design);
 - (8) Section 10-296(j) (intersection designs);
 - (9) Section 10-296(k) (cul-de-sacs);
 - (10) Section 10-322 (swale sections);
 - (11) Section 10-329(d)(1)a. (setbacks for water retention/detention excavations);
 - (12) Section 10-329(d)(4) (excavation bank slopes and percent hardening), except that development in the Airport Wildlife Hazard Protection Zone is subject to compliance with section 10-418(5);
 - (13) Section 10-352 (public water);
 - (14) Section 10-353 (public sewer);

- (15) Section 10-384(c) (water mains);
- (16) Section 10-415(b) (indigenous native vegetation);
- (17) Section 10-418(3) (percent hardening and compensatory littorals);
- (18) Section 10-441 (mass transit facilities);
- (19) Section 10-416(c) (landscaping of parking and vehicle use areas);
- (20) Section 10-610 (site design standards and guidelines for commercial developments);
- (21) Section 10-620(d)(4)a. (requiring full parapet coverage for roofs utilizing less than or equal to 2V:12H pitch);
- (22) Section 10-716 (piping materials in right-of-way);
- (23) Sections 10-329(f) and 10-418(4) (restoration of existing bank slopes and littoral designs).

Sec. 10-329. Excavations.

Staff note: LDC Section 10-329(d)(4) references the changes recommended in LDC Section 10-418(5).

Sections (a) through (c) remain unchanged.

Section (d)(1) through (3) remain unchanged.

(4) *Bank slopes.* Excavation bank slopes for new ~~development projects~~. The design of shorelines for retention and detention areas must be sinuous rather than straight, as described in Division 6 of this article. The banks of excavations permitted under this section must be sloped at a ratio not greater than six horizontal to one vertical from the top of bank to a water depth of two feet below the dry season water table, except that development in the Airport Wildlife Hazard Protection Zone must comply with section 10-418(5). The slopes must be not greater than two horizontal to one vertical thereafter, except where the ~~Director of~~ Development Services Manager determines that geologic conditions would permit a stable slope at steeper than a two to one ratio. Excavation bank slopes must comply with the shoreline configuration, slope requirements and planting requirements for mimicking natural systems specified in Section 10-418, except that development in the Airport Wildlife Hazard Protection Zone must comply with section 10-418(5). Placement of backfill to create lake bank slopes is prohibited unless, prior to the issuance of a Certificate of Compliance, the applicant provides signed and sealed test reports from a geotechnical engineer certifying that the embankment was placed and compacted to its full thickness to obtain a minimum of 95 percent of the maximum dry density (modified Proctor) for embankments that will support structures, and 90 percent of maximum dry density (modified Proctor) for other embankments in accordance with ASTM D1557.

An administrative deviation may be requested from the required six to one slope requirement to allow a slope no steeper than four to one. The deviation may be granted if the Development Services Manager~~Director~~ is satisfied that the enhanced slope protection measures proposed by the applicant will prevent erosion and scouring. Acceptable enhanced slope protection measures include, but are not limited to, use of enhanced herbaceous plantings in combination with an appropriate geosynthetic turf reinforcement mat or similar shoreline stabilization technique that does not include hardened structures such as those identified in ~~S~~section 10-418(3). The design technique used will be determined by the project engineer based upon evaluation of site-specific conditions and the proposed development parameters. The deviation request may be processed under ~~S~~section 10-104 or in conjunction with a planned development zoning application. Planted littoral shelves for development in the Airport Wildlife Hazard Protection Zone must comply with section 10-418(5).

Sec. 10-418. Surface water management systems.

Staff note: Revise planted littoral shelf section to allow 100 percent of the littorals to be substituted for wetland trees and allow 4:1 lake bank slopes limited to projects located within the Airport Wildlife Hazard Protection Zone. The changes eliminate the need for deviations and protect the health and safety of the traveling public.

Subsection (1) remains unchanged.

- (2) *Planted littoral shelf (PLS).* The following features are considered sufficient to mimic the function of natural systems, improve water quality and provide habitat for a variety of aquatic species, including wading birds and other waterfowl. Planted littoral shelves for development located within the Airport Wildlife Hazard Protection Zone must comply with section 10-418(5).
- a. *Size requirements.* The PLS shoreline length must be calculated at 25 percent of the total linear feet of the lake at control elevation.
 - b. *Location criteria.*
 1. The PLS should be concentrated at one location of the lake, preferably adjacent to a preserve area, to maximize its habitat value and minimize maintenance efforts. The required PLS may be divided and placed in multiple locations as long as no PLS area is smaller than 1,000 square feet. Whenever possible, the PLS must be located away from residential lots to avoid maintenance and aesthetic conflicts with residential users.
 2. The PLS may be located adjacent to control structures and pipe outlets or inlets to maximize water quality benefits and not impede flow.
 3. If contained within a lake the PLS must function as a typical freshwater marsh in ponds with slopes from 6(H) to 1(V) to not more than 4(H) to 1(V).
 - c. *Shelf configuration.*
 1. The PLS must be designed to include a minimum of a 20-foot-wide littoral shelf extending waterward of the control elevation at a depth of no greater than two feet below the control elevation.
 2. A detailed cross section of the PLS must be depicted on the approved development order plan.
 - d. *Plant selection.*
 1. Herbaceous plants must be selected based upon the expected water level fluctuations and maximum water depths in which the selected plants will survive. The PLS areas must be planted with at least four different native herbaceous plant species.
 2. Plant calculations. The required number of herbaceous plants is calculated based upon placement spaced two-foot on center for the total area encompassed by the PLS. The PLS must be planted with minimum two-inch liner container herbaceous plants.

The total number of plants for the PLS may be calculated by taking the total linear feet of shoreline multiplied by 25 percent, then multiplied by the 20-foot-wide shelf and divided by four to obtain the two-foot on center spacing.
 3. Native wetland trees may be substituted for up to 25 percent of the total number of herbaceous plants required. One tree (minimum ten-foot height; two-inch caliper, with a four-foot spread) may be substituted for 100 herbaceous plants. Trees must meet the minimum standards set forth in Section 10-420. Development located within Airport Wildlife Hazard Protection Zone must substitute 100 percent of the required number of herbaceous plants to wetland trees.

- e. *Shelf elevation.* The design elevation of the PLS will be determined based upon the ability of the PLS to function as a marsh community and the ability of selected plants to tolerate the expected range of water level fluctuations.
 - f. *Survival of plant materials.* Trees and herbaceous plants must be maintained in perpetuity consistent with Section 10-421(b).
- (3) *Bulkheads, geo-textile tubes, riprap revetments or other similar hardened shoreline structures.* Bulkheads, geo-textile tubes, riprap revetments or other similar hardened shoreline structures may comprise up to 20 percent of an individual lake shoreline. These structures cannot be used adjacent to single-family residential uses. Except for development located within Airport Wildlife Hazard Protection Zone (section 10-418(5)), Aa compensatory littoral zone equal to the linear footage of the shoreline structure must be provided within the same lake meeting the following criteria:
- a. A five-foot-wide littoral shelf planted with herbaceous wetland plants. To calculate the littorals for this shelf design, indicate the number of linear feet of shoreline structure multiplied by five feet for the littoral shelf width divided by two to obtain the required plant quantity; or
 - b. An equivalent littoral shelf design as approved by the Development Services Manager~~Director~~.
- (4) *Restoration.* Restoration of existing bank slopes that have eroded over time and no longer meet the minimum littoral design criteria applicable at the time the lakes were excavated will be in accordance with §section 10-329(f).
- (5) Development located within the Airport Wildlife Hazard Protection Zone is subject to the following:
- a. All lake bank slopes must be sloped at a ratio not greater than four horizontal to one vertical (4:1) from the top of bank to a water depth of two feet below the dry season water table and provide enhanced slope protection measures to stabilize the lake bank slope in accordance with section 10-329(d)(4).
 - b. Planted littoral shelves must substitute 100 percent of the herbaceous plants to wetland trees in accordance with section 10-418(2)d.3.
 - b. Quantity of herbaceous plants must be calculated in accordance with section 10-418(2)d.2.
 - c. Compensatory littorals are not required for hardened shoreline.