

Variance Explanation:

The Lee County Land Development Code (see below) promotes flat lake bank slopes and littoral banks and plantings that are conducive for supporting wildlife in and around lakes. The flat littoral shelf and 6:1 lake bank allows for the aquatic wildlife to venture into this location and attract birds.

The relief sought is believed to be promoted by the Airport Authority when projects are this close to an airport as a safety measure.

This project is directly south of RSW airport. Any condition or circumstance that causes bird attraction near airport can prove fatal to the traveling public.

The requests are to steepen the lake banks slopes as indicated in *Sec. 10-329 - Excavations (d) Standard, (4) Bank slopes from 6:1 to 4:1* and eliminate *Sec. 10-418 - Surface water management systems, (2) Planted littoral shelf (PLS)* are in effort to reduce the attraction of birds and improve safety.

Considerations:

The project being located near RSW airport is the reason for this variance request and not the result of the landowner's actions. The variance will relieve the burden caused by the land development requirements. The granting of the variance will not be injurious to the neighborhood or detrimental to the public welfare. The variance is consistent with the Lee Plan.

Sec. 10-329. - Excavations. (d) *Standards. (4) Bank slopes.*

Excavation bank slopes for new 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. The slopes must be not greater than two horizontal to one vertical thereafter, except where the Director of Development Services 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](#). 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 accord 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 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 [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 [section 10-104](#) or in conjunction with a planned development zoning application.

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Sec. 10-418. - Surface water management systems. (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.

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; 2 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](#).

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\(b\)](#).