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Lee County LDC Regulations-Hurricane Preparedness

Board of County Commissioners, Lee County, FL

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Sec. 2-481. - Purpose and intent.

The purpose of this article is to address the impacts created by residential development on hurricane shelter availability and evacuation capability in Lee County. These regulations are intended to mitigate the growing hurricane shelter deficit, along with related effects on evacuation times and infrastructure, caused by permitting residential development without addressing the incremental impact on the county hurricane preparedness program.

(Ord. No. 00-14, § 1, 6-27-00)

Sec. 2-482. - Applicability.

This article applies only to development required to obtain a development order under chapter 10 and is applicable to all new residential development within unincorporated Lee County that is located in a land falling category 1, 2, or 3 storm surge area. The provisions of this article are intended to supersede the provisions of Lee County Administrative Code 7-9 in the event of a conflict. Under this article, residential development includes, but is not limited to, all assisted living facilities, dwelling units, living and housing units, mobile homes, recreational vehicle developments (including recreational vehicles qualifying as permanent residences under this Code), hotel and motel, health care facilities Groups I, II and IV, and social services facilities Groups III and IV, as these terms are defined in chapter 34. This article does not eliminate the shelter requirements applicable to mobile home or recreational vehicle developments contained in section 10-258 to the extent this obligation is fulfilled by compliance with this article.

(Ord. No. 00-14, § 1, 6-27-00; Ord. No. 09-23, § 2, 6-23-09)

Sec. 2-483. - Definitions.

The following words, terms and phrases, when used in this article, will have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Coastal high hazard area means that area of the hurricane vulnerability zone defined as the land falling category 1 storm surge zone as delineated by the Southwest Florida Regional Planning Council.

Division means the Lee County Division of Public Safety.

Hurricane evacuation routes means the routes designated by the division that have been identified with standardized statewide directional signs, or are identified on the regional hurricane evacuation study for the movement of persons to safety in the event of a hurricane.

Hurricane shelter space means, at minimum, an area of 20 square feet per person located within a hurricane shelter.

Hurricane vulnerability zone means the areas delineated by a regional hurricane evacuation study as requiring evacuation in the event of a land falling category 3 hurricane event.

Primary public hurricane shelter means a structure designated by the division as a place for shelter during a hurricane event. Only those structures located outside of the coastal high hazard area that have been designated by the county or the American Red Cross as primary shelters meet this definition.

Vertical evacuation means the preplanned use of predetermined structures located in the hurricane vulnerability zone as hurricane shelters, and the on-site or in-place sheltering of residents in single or multi-family structures that are elevated above the predicted flood levels anticipated within the hurricane vulnerability zone.

(Ord. No. 00-14, § 1, 6-27-00; Ord. No. 09-23, § 2, 6-23-09)

Sec. 2-484. - Determining impacts.

(a) *Authority.* The division has the authority and responsibility to determine the hurricane shelter and evacuation impacts. In the event of a dispute with respect to the level or amount of impact, the division director's decision will control. The formulas for calculating the impacts are identified below.

(b) *Shelter impacts.* Shelter impacts are largely related to building issues (i.e., availability of actual appropriate shelter space). Impact on the hurricane shelter availability is calculated as follows:

Residential Units:

The following formula must be used for all dwelling units, living and housing units, mobile homes, recreational vehicle developments, health care facilities—Groups I, II and IV, and social services-groups III and IV.

In Health care facilities groups I, II and IV, social

services—Groups III and IV, and other similar group residences, each four beds will be counted as one residential unit.

$$U \times P = N$$

$$N \times SSr = Sp(r)$$

The following formula must be used for all hotels and motels.

$$Hu \times O = R$$

$$R \times Ssr = Sp(hu)$$

Hotel/
Motel Units:

Total Units

$$Sp(r) + Sp(hu) = Sp \text{ (total spaces)}$$

$$Sp \times Rfa = Sq \text{ (t)}$$

Notes:

O	=	Number of people per unit
R	=	Residents in residence
N	=	Number of residents in development
U	=	Number of residential units
Hu	=	Number of hotel/motel units
P	=	Persons per household*
Rfa	=	Required square feet of shelter floor area per space (currently 20 square feet per space)
Sp(r)	=	Shelter spaces needed by development's residential units
Sp(hu)	=	Shelter spaces needed by development's hotel/motel units
Ssr	=	Shelter seeking rate (currently 0.21 is used)
Sq(t)	=	total square feet of shelter floor area required for the development

* For Developments of Regional Impact, use the value set forth below that represents the closest year to the established buildout date:

- Year 2000 - 2.25
- Year 2005 - 2.21
- Year 2010 - 2.17
- Year 2015 - 2.13
- Year 2020 - 2.09

The division director has the discretion to permit the use of an alternative person per household (P) figure for non-development of regional impact projects. Any alternative figure used must be supported by valid evidence, acceptable to the director and derived from an established source. The applicant requesting the alternative figure is responsible for providing sufficient evidence to substantiate the alternative figure.

(c)

Evacuation impacts. Evacuation impacts are largely related to the transportation infrastructure necessary to accommodate timely and efficient evacuation. Impacts on the evacuation time and infrastructure are calculated as follows:

Step One: Calculate the number of evacuating vehicles for all residential units:

$\frac{EV(r)}{EV(r)}$	$=$	$U \times V$
	$=$	<p>the number of evacuating vehicles for all residential units (i.e., single-family residential, multi family, hotels/motels, etc.)</p>
$\frac{U}{V}$	$=$	<p>the number of residential units</p>
	$=$	<p>number of vehicles per occupied unit. The current figure used is 1.1</p>

Step Two: Calculate the total number of evacuating vehicles for all residential units in the development.

$$\sigma EV(r)$$

(Ord. No. 00-14, § 1, 6-27-00)

Sec. 2-485. - Impact mitigation.

(a)

Authority. The division director will make the final decision with respect to the acceptability of the type and degree of mitigation offered to address the proposed development. This determination will be based upon consideration of the type and intensity of development, its location and the incremental effect on the hurricane preparedness program created by the development. The mitigation requested by the county must have a reasonable relationship to the incremental impact of the development. Appropriate calculation of the impacts in accordance with section 2-484 will constitute sufficient evidence of the reasonable relationship.

The division director has the authority to deny acceptance of a proposed type of mitigation if the proposal is determined to be inappropriate for the location involved or constitutes the creation of an unacceptable shelter facility (e.g. on-site shelter without all appropriate shutters).

The option chosen by the developer to mitigate shelter and evacuation impacts must be approved prior to the issuance of a development order for any residential development that precipitates the requirement to mitigate under this article. The payment in lieu option must be satisfied prior to the issuance of a building permit.

(b)

Shelter impacts. One or a combination of the following options may be used to address the impacts on the hurricane shelter program precipitated by the proposed residential development except for those residential developments listed in section (5) below. The division will determine acceptability and appropriateness of the type of mitigation proposed.

(1)

Land donation. A donation of land must meet the following minimum criteria:

- a. The land must be located outside the coastal high hazard area.
- b. The land is capable of being used to reduce hurricane shelter impacts in Lee County.
- c. The county will receive marketable fee title to the property. (Property encumbered by a restriction that it be used solely for hurricane shelter purposes will be deemed unacceptable.)
- d. The value of the land donated will be determined as of the earliest date the requirement to provide hurricane preparedness mitigation becomes applicable based upon formal county action (i.e., rezoning, platting, etc.).

(2)

Donate use of private structure. A donation of the use of a private structure must meet the following minimum criteria:

- a. The structure must be located outside the coastal high hazard area.
- b. The structure must be constructed and capable of use as a primary public hurricane shelter. Specifically, the structure and all required equipment and supplies must be:
 - 1.

- Elevated to the anticipated land falling category 3 flood level; and
- 2. Constructed to withstand winds of at least 150 miles per hour according to the Florida Building Code; and
- 3. Constructed with a minimum of exterior glass, with all glazed openings provided with impact protection in accordance with the Florida Building Code; and
- 4. Equipped with emergency power and potable water supplies; and
- 5. Have adequate ventilation, sanitary facilities and first aid equipment.
- 6. The structure, and all restrooms and support facilities, must comply with all regulations regarding accessibility for persons with disabilities.

c.

For purposes of compliance with this article, the cost of providing or donating a structure for use as a primary hurricane shelter will be determined as the incremental cost difference attributable to bringing the structure up to primary public shelter standards from the original primary proposed use.

(3)

Payment in lieu of donation of land or use of a private structure. The amount of a payment in lieu will be calculated using the following method or formula:

Step One: Calculate Costs for Shelter Improvements

Multiply the total required square feet of shelter floor area [(from section 2-484(b))] by \$6.66 to determine costs for increased wind speed standards and elevation.

Note:

- \$1.34 per square foot of shelter space for increased essential facility wind speed standards
- \$5.32 increase for elevation of a square foot of shelter space above storm surge for a Category 3 hurricane;
- equals \$6.66 per square foot of shelter space

Step Two: Emergency Power Costs

$$\text{LPC} \times \text{SF} \times \text{PD} \times \$200.00 \div 1000$$

$$5 \times 20 \times 1 \text{ (representing one person)} \times \$200.00 \div 1000 = 20.00 \text{ per person}$$

Note:

- LPC = number of watts per square foot for load and power consumption of typical uses
- SF = 20 sq. feet, the minimum hurricane shelter space area per person, see 9J-2.0256(1)(f), FAC
- PD = number of people in dwelling unit; 1 is used to calculate a per person cost

Step Three: Total Costs from Step one for sheltering and Step two for emergency power (not including shuttering)

$$(\$6.66 \times \text{Sq}) =$$

\$ for increased wind speed standards and elevation

Plus \$20.00 per person;

Note:

Sq = Total Square Feet from sec. 2-484(b), i.e., the value derived for Sq (t).

(4)

On-site shelter. Provision of an on-site shelter must meet the following minimum criteria:

a.

The on-site shelter must be located outside the coastal high hazard area unless constructed in accordance with the standards set forth in section 2-485(b)(5)a for the uses referred to therein.

b.

The shelter space to be provided must, at minimum, equal the hurricane shelter space demand the proposed development is anticipated to create.

c.

The structure and all required equipment and supplies must be:

- 1. Elevated to the anticipated land falling category 3 flood level; and
- 2. Constructed to withstand winds of at least 150 miles per hour according to the Florida Building Code; and
- 3. Constructed with a minimum of exterior glass with all glazed openings provided with impact protection in accordance with the Florida Building Code; and
- 4.

Equipped with emergency power and potable water supplies; and

5. Provided with adequate ventilation, sanitary facilities and first aid equipment.

6. The structure, and all restrooms and support facilities, must comply with all regulations regarding accessibility for persons with disabilities.

d. For purposes of compliance with this article, the cost of providing a structure for use as an on-site hurricane shelter will be determined as the incremental cost difference attributable to bringing the structure up to public shelter standards from the original or primary use.

e. The developer must arrange for the annual training for the on-site shelter manager. Training will be conducted by the American Red Cross and approved by Lee County Emergency Management.

(5)

Health care facilities—Group I (nursing and personal care facilities), Group II (skilled nursing care facilities and hospices, Group IV (hospitals), assisted living facilities, continuing care facilities, and Social Services Groups III and IV.

a. The facility must be located outside the coastal high hazard area unless designed to address shelter and evacuation impacts on-site as follows.

1. On-site shelters and all required equipment and supplies for these facilities must comply with the following standards:
 - i. Elevation to the anticipated storm surge from a land falling Category 5 storm.
 - ii. Construction to withstand winds of 200 mph in accordance with the Florida Building Code.
 - iii. Construction with minimum exterior glass with all glazed openings provided with impact protection in accordance with the Florida Building Code.
 - iv. Equipped with emergency power and potable water supplies to last up to five days.
 - v. Protected with adequate ventilation, sanitary facilities, and first aid medical equipment.
2. Developer/operator must conduct annual training of the on-site shelter managers. The training is to be conducted by the Red Cross and approved by Lee County Emergency Management.
3. Developer/operator must submit a post storm recovery plan including post storm evacuation plan for review and approval by Lee County Emergency Management.

b. Facilities located within the category 2 or 3 land falling storm surge areas must construct sufficient hurricane shelter space for its residents meeting the construction standards set forth in section 2-485(b)(4). This requirement may not be satisfied by payment in lieu of constructing the shelter.

(c)

Evacuation impacts. One or a combination of the following options may be used to address the impacts on hurricane evacuation routes with respect to evacuation timing and infrastructure precipitated by the proposed residential development. Acceptability and appropriateness of the type of mitigation proposed will be determined by the Division and the Lee County Department of Transportation (DOT).

(1)

Roadway elevation or improvements. Acceptability and appropriateness of this option will be determined by the DOT based upon the residential development vulnerability conditions. Mitigation under this option may include one or more of the following:

- a. Construction of roads in the development or subdivision will be built to meet the same elevation of the nearest segment of a designated evacuation route. Determination as to the applicable route or segment will be made by the division in consultation with the Lee County DOT.
- b. Construction of the main access or spine road in the development or subdivision to an elevation meeting the one in ten to the one in 25-year storm event. The Lee County DOT will determine the applicable storm event standard.
- c. Improvement of an offsite road that will be used by the subdivision or development for evacuation purposes. The road segment and standard for the road improvement will be determined by the Lee County DOT.

(2)

Evacuation efficiency improvements. Provision of funds to improve the ability to provide information to evacuees during actual evacuation situations or to improve the existing warning and notification system. Funds provided under this option may be used for items such as:

a.

Communications equipment to convey real time conditions to the public on the roadways

b.

Information systems along major arterial evacuation routes to convey emergency information.

Decisions with respect to the expenditure of funds provided under this option will be made by the division director. All equipment purchases must be based upon an identified need for the additional equipment and must serve to upgrade the existing warning and notification system.

(3)

Vertical evacuation. The viability of this mitigation option will be based upon the following criteria:

a.

The structure must be elevated above the anticipated category 3 land falling hurricane storm surge and must be able to withstand wind speeds of at least 150 miles per hour.

b.

The structure must be located outside the coastal high hazard area.

(d)

Mitigation options that will address both shelter and evacuation impacts: One or a combination of the following options will constitute full mitigation of both shelter and hurricane evacuation impacts for residential development, with the exception of those residential developments listed in section 2-485(b)(5)b:

(1)

Safe room. This option provides for construction of a room, within a residential building, that is designed to withstand a hurricane and is capable of accommodating the occupants of the dwelling. Viability of this mitigation option will be determined by the division based upon the following criteria:

a.

The room selected for this purpose is built to the current standard set forth by the Federal Emergency Management Agency for a safe room.

b.

The residential unit where the safe room is constructed is located outside the coastal high hazard area.

(2)

Elevation above hurricane flooding levels. This option requires construction of residential units above the category 3 land falling storm surge level. This option is available only for construction located outside the coastal high hazard area and does not subject the construction to standards in excess of those applicable in the county building codes.

(e)

All funds collected in accordance with this article are required to be spent to mitigate the impacts of the development from which they are collected.

(Ord. No. 00-14, § 1, 6-27-00; Ord. No. 01-18, § 1, 11-13-01; Ord. No. 03-16, § 1, 6-24-03; Ord. No. 09-23, § 2, 6-23-09)

Sec. 2-486. - Appeal.

Decisions made by the director may be appealed directly to the Board of County Commissioners as an appeals agenda item during a regularly scheduled Board meeting. The agenda item must comply with Lee County Administrative Code 1-2.

(Ord. No. 00-14, § 1, 6-27-00)