

Florida Wind Speed FGDL GIS Data History (2007, 2010, 2020, 2023)

[FGDL Archive Datasets](#): Search Term: **windz**, please review Metadata for each dataset.

<https://fgdl.org/ords/r/prod/fgdl-archive/catalog>

https://fgdl.org/zips/geospatial_data/archive/

The screenshot shows the FGDL Archive Data Catalog interface. At the top, there are logos for UF, GEOPLAN CENTER, and FGDL. Below the logos is a search bar with the text "Search: All Text Columns" and a "Go" button. A search filter is applied, showing "Search for 'windz'". Below the search bar is a table with 9 rows of data. The table has columns for "FGDL Layername", "Source", "Title", "Download", "Metadata", and "Source Date...".

	FGDL Layername	Source	Title	Download	Metadata	Source Date...
1	WINDZONES	GEOPLAN	Wind Speed Zones - County			2007-01-01
2	WINDZNS_CAT3_ASCE710_APR08	FBC	FBC ASCE 7-10 Risk Category III Basic Wind Speed Map (1700yr) for Florida - 2008			2008-04-01
3	WINDZNS_CAT2_ASCE710_APR08	FBC	FBC ASCE 7-10 Risk Category II Basic Wind Speed Map (700yr) for Florida - 2008			2008-04-01
4	WINDZNS_CAT1_ASCE710_APR08	FBC	FBC ASCE 7-10 Risk Category I Basic Wind Speed Map (300yr) for Florida - 2008			2008-04-01
5	WINDZNS_CAT4_ASCE716_JUN20	FBC	FBC ASCE 7-16 Risk Category IV Basic Wind Speed Map (3000yr) with Modifications for Florida - 2020			2020-06-02
6	WINDZONES_CAT4_ASCE7_22_JUN21	FBC	ASCE/SEI 7-22 Risk Category IV Basic Wind Speed Map (3000yr) for Florida - 2021			2021-06-28
7	WINDZONES_CAT3_ASCE7_22_JUN21	FBC	ASCE/SEI 7-22 Risk Category III Basic Wind Speed Map (1700yr) for Florida - 2021			2021-06-28
8	WINDZONES_CAT2_ASCE7_22_JUN21	FBC	ASCE/SEI 7-22 Risk Category II Basic Wind Speed Map (700yr) for Florida - 2021			2021-06-28
9	WINDZONES_CAT1_ASCE7_22_JUN21	FBC	ASCE/SEI 7-22 Risk Category I Basic Wind Speed Map (300yr) for Florida - 2021			2021-06-28

Florida Building Code 2001

2001 FLORIDA BUILDING CODE WIND MAPS – **No GIS Data Available, PDF Map in Appendix.**

Florida Building Code 2007

Please Note: Only one GIS dataset was created for 2007.

2007 FLORIDA BUILDING CODE WIND MAPS

https://www.floridabuilding.org/FBC/WindMaps/2007_Wind_Maps.htm

Map Book with 63 Countywide Maps

https://adhoc.geoplan.ufl.edu/downloads/kate/windspeed_2007/FBC_2007_Wind_Speed_Map_Book.pdf

FLORIDA WIND SPEED ZONES (AKA: Wind Speed Zones – County)

FGDL FILENAME: WINDZONES

<https://fgdl.org/zips/metadata/xml/windzones.xml>

https://fgdl.org/zips/geospatial_data/archive/windzones.zip

This dataset represents basic wind speed in miles per hour used in the development of wind loads outlined by the building code of each county in the state of Florida. These maps were developed in conjunction with the 2007 Florida Building Code. The information herein is based on ordinances codified through Ordinance Numbers, that were enacted from 2006 to 2007. See user notes for complete ordinance information. Please Note: Map revisions occurred for the following four counties: Bradford (6/4/2008), Clay (6/4/2008), Citrus (6/12/2008), and Dixie (4/1/2010). Please Note: Map Not Available for the following three counties; Calhoun, Flagler, and Liberty.

Florida Building Code 2010

Changes to the Wind Speed Maps and Wind Design – 2010 Florida Building Codes

This reference is to the 2010 Edition of ASCE 7 (ASCE 7-10).

https://www.floridabuilding.org/fbc/wind_2010/flyer_wind_january2012.pdf

See Figures 1609A, 1609B, and 1609C **(Please Note, Fig B: 1609B contains both Cat III & IV)**

Figure 1609A Countywide Map Book

https://ad hoc.geoplan.ufl.edu/downloads/kate/windspeed_2010/FBC_2011_Wind_Speed_Maps_Figure_A_MapBook.pdf

Figure 1609B Countywide Map Book

https://ad hoc.geoplan.ufl.edu/downloads/kate/windspeed_2010/FBC_2011_Wind_Speed_Maps_Figure_B_MapBook.pdf

Figure 1609C Countywide Map Book

https://ad hoc.geoplan.ufl.edu/downloads/kate/windspeed_2010/FBC_2011_Wind_Speed_Maps_Figure_C_MapBook.pdf

Fig A: 1609A

ASCE 7-10 Risk Category II Basic Wind Speed Map (700yr) for Florida - 2008

FGDL FILENAME: WINDZNS_CAT2_ASCE710_APR08

https://fgdl.org/zips/metad ata/xml/windzns_cat2_asce710_apr08.xml

https://fgdl.org/zips/geospatial_data/archive/windzns_cat2_asce710_apr08.zip

Fig B: 1609B

ASCE 7-10 Risk Category III & IV Basic Wind Speed Map (1700yr) for Florida - 2008

FGDL FILENAME: WINDZNS_CAT3_ASCE710_APR08

https://fgdl.org/zips/metad ata/xml/windzns_cat3_asce710_apr08.xml

https://fgdl.org/zips/geospatial_data/archive/windzns_cat3_asce710_apr08.zip

Fig C: 1609C

ASCE 7-10 Risk Category I Basic Wind Speed Map (300yr) for Florida - 2008

FGDL FILENAME: WINDZNS_CAT1_ASCE710_APR08

https://fgdl.org/zips/metad ata/xml/windzns_cat1_asce710_apr08.xml

https://fgdl.org/zips/geospatial_data/archive/windzns_cat1_asce710_apr08.zip

2010 Map Language:

BASIC WIND SPEED. The basic wind speed in miles per hour, for the development of wind loads, shall be determined from Figure 1609. The exact location of wind speed lines shall be established by local ordinance using recognized physical landmarks such as major roads, canals, rivers and lake shores whenever possible.

WIND-BORNE DEBRIS REGION. Areas within hurricane- prone regions located:

1. Within 1 mile (1.61 km) of the coastal mean high water line where the ultimate design wind speed Vult is 130 mph (48 m/s) or greater; or

2. In areas where the ultimate design wind speed Vult is 140 mph (53 m/s) or greater

For Risk Category II buildings and structures and occupancy category III buildings and structures, except health care facilities, the windborne debris region shall be based on Figure 1609A. For occupancy category IV buildings and structures and occupancy category III health care facilities, the windborne debris region shall be based on Figure 1609B.

Florida Building Code 2020

Please Note: Wind Speed line work did not change for CAT 1-3, however, CAT 4 now has new line work. The Figure Numbers, Notes and Map language have been changed for the FBC 2020 maps.

Figure 1609.3(4)

Risk Cat I

ASCE 7-10 Risk Category I Basic Wind Speed Map (300yr) for Florida - 2008

FGDL FILENAME: WINDZNS_CAT1_ASCE710_APR08

https://fgdl.org/zips/metadata/xml/windzns_cat1_asce710_apr08.xml

https://fgdl.org/zips/geospatial_data/archive/windzns_cat1_asce710_apr08.zip

Notes:

1. Values are ultimate design 3-second gust wind speeds in miles per hour (m/s) at 33 ft (10 m) above ground for Exposure C category.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
4. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.
5. Wind speeds correspond to approximately a 15% probability of exceedance in 50 years (Annual Exceedance Probability = 0.00333, MRI = 300 years).

Figure 1609.3(1)

Risk Cat II

ASCE 7-10 Risk Category II Basic Wind Speed Map (700yr) for Florida - 2008

FGDL FILENAME: WINDZNS_CAT2_ASCE710_APR08

https://fgdl.org/zips/metadata/xml/windzns_cat2_asce710_apr08.xml

https://fgdl.org/zips/geospatial_data/archive/windzns_cat2_asce710_apr08.zip

Notes:

1. Values are ultimate design 3-second gust wind speeds in miles per hour (m/s) at 33 ft (10 m) above ground for Exposure C category.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
4. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.
5. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (Annual Exceedance Probability = 0.00143, MRI = 700 years).

Figure 1609.3(2)

Risk Cat III

ASCE 7-10 Risk Category III Basic Wind Speed Map (1700yr) for Florida - 2008

FGDL FILENAME: WINDZNS_CAT3_ASCE710_APR08

https://fgdl.org/zips/metadata/xml/windzns_cat3_asce710_apr08.xml

https://fgdl.org/zips/geospatial_data/archive/windzns_cat3_asce710_apr08.zip

Notes:

1. Values are ultimate design 3-second gust wind speeds in miles per hour (m/s) at 33 ft (10 m) above ground for Exposure C category.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
4. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.
5. Wind speeds correspond to approximately a 3% probability of exceedance in 50 years (Annual Exceedance Probability = 0.000588, MRI = 1700 years).

[Florida Building Code 2020 Continue](#)

Figure 1609.3(3)

Risk Cat IV

ASCE 7-16 Risk Category IV Basic Wind Speed Map (3000yr) with Modifications for Florida - 2020

FGDL FILENAME: WINDZNS_CAT4_ASCE716_JUN20

https://fgdl.org/zips/metadata/xml/windzns_cat4_asce716_jun20.xml

https://fgdl.org/zips/geospatial_data/archive/windzns_cat4_asce716_jun20.zip

Notes:

1. Values are ultimate design 3-second gust wind speeds in miles per hour (m/s) at 33 ft (10 m) above ground for Exposure C category.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
4. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.
5. Wind speeds correspond to approximately a 1.6% chance of exceedance in 50 years (Annual Exceedance Probability = 0.00033, MRI = 3000 years).

2020 Map Language:

BASIC WIND SPEED. The basic wind speed in miles per hour, for the development of wind loads, shall be determined from Figure 1609.3. The exact location of wind speed lines shall be established by local ordinance using recognized physical landmarks such as major roads, canals, rivers and lake shores whenever possible.

WIND-BORNE DEBRIS REGION. Areas within hurricane- prone regions located:

1. Within 1 mile (1.61 km) of the coastal mean high water line where the ultimate design wind speed V_{ult} is 130 mph (58 m/s) or greater; or
2. In areas where the ultimate design wind speed V_{ult} is 140 mph (63.6 m/s) or greater

For Risk Category II buildings and other structures and Risk Category III buildings and other structures, except health care facilities, the windborne debris region shall be based on Figure 1609.3(1). For Risk Category III health care facilities, the windborne debris region shall be based on Figure 1609.3(2). For Risk Category IV buildings and other structures, the windborne debris region shall be based on Figure 1609.3(3).

Florida Building Code 2023

Please Note: Wind Speed **line work has changed for CATs 1-4.**

Please Note: There is no statewide Wind Borne –Debris Region GIS Dataset as the exact coastline is determined at the county level.

For more information, please see: <https://www.geoplan.ufl.edu/portfolio/wind-speed/>

Florida Building Code (FBC) 8th Edition (2023): FIGURES 1609.3(1-4)

Figure 1609.3(4)

Risk Cat I

ASCE/SEI 7-22 Risk Category I Basic Wind Speed Map (300yr) for Florida - 2021

FGDL FILENAME: WINDZONES_CAT1_ASCE7_22_JUN21

https://fgdl.org/zips/metadata/xml/windzones_cat1_asce7_22_jun21.xml

https://fgdl.org/zips/geospatial_data/archive/windzones_cat1_asce7_22_jun21.zip

Figure 1609.3(1)

Risk Cat II

ASCE/SEI 7-22 Risk Category II Basic Wind Speed Map (700yr) for Florida - 2021

FGDL FILENAME: WINDZONES_CAT2_ASCE7_22_JUN21

https://fgdl.org/zips/metadata/xml/windzones_cat2_asce7_22_jun21.xml

https://fgdl.org/zips/geospatial_data/archive/windzones_cat2_asce7_22_jun21.zip

Figure 1609.3(2)

Risk Cat III

ASCE/SEI 7-22 Risk Category III Basic Wind Speed Map (1700yr) for Florida - 2021

FGDL FILENAME: WINDZONES_CAT3_ASCE7_22_JUN21

https://fgdl.org/zips/metadata/xml/windzones_cat3_asce7_22_jun21.xml

https://fgdl.org/zips/geospatial_data/archive/windzones_cat3_asce7_22_jun21.zip

Figure 1609.3(3)

Risk Cat IV

ASCE/SEI 7-22 Risk Category IV Basic Wind Speed Map (3000yr) for Florida - 2021

FGDL FILENAME: WINDZONES_CAT4_ASCE7_22_JUN21

https://fgdl.org/zips/metadata/xml/windzones_cat4_asce7_22_jun21.xml

https://fgdl.org/zips/geospatial_data/archive/windzones_cat4_asce7_22_jun21.zip

2023 map language:

Add the following new note to Figures 1609.3(1), 1609.3(2), 1609.3(3), and 1609.3(4) in the Florida Building Code, Building:

6. Location-specific wind speeds shall be permitted to be determined using the ASCE Wind Design Geodatabase. The ASCE Wind Design Geodatabase can be accessed at the ASCE 7 Hazard Tool (<https://asce7hazardtool.online>) or equivalent.

Appendix

2001 FLORIDA BUILDING CODE WIND MAPS – No GIS Data Available, PDF image

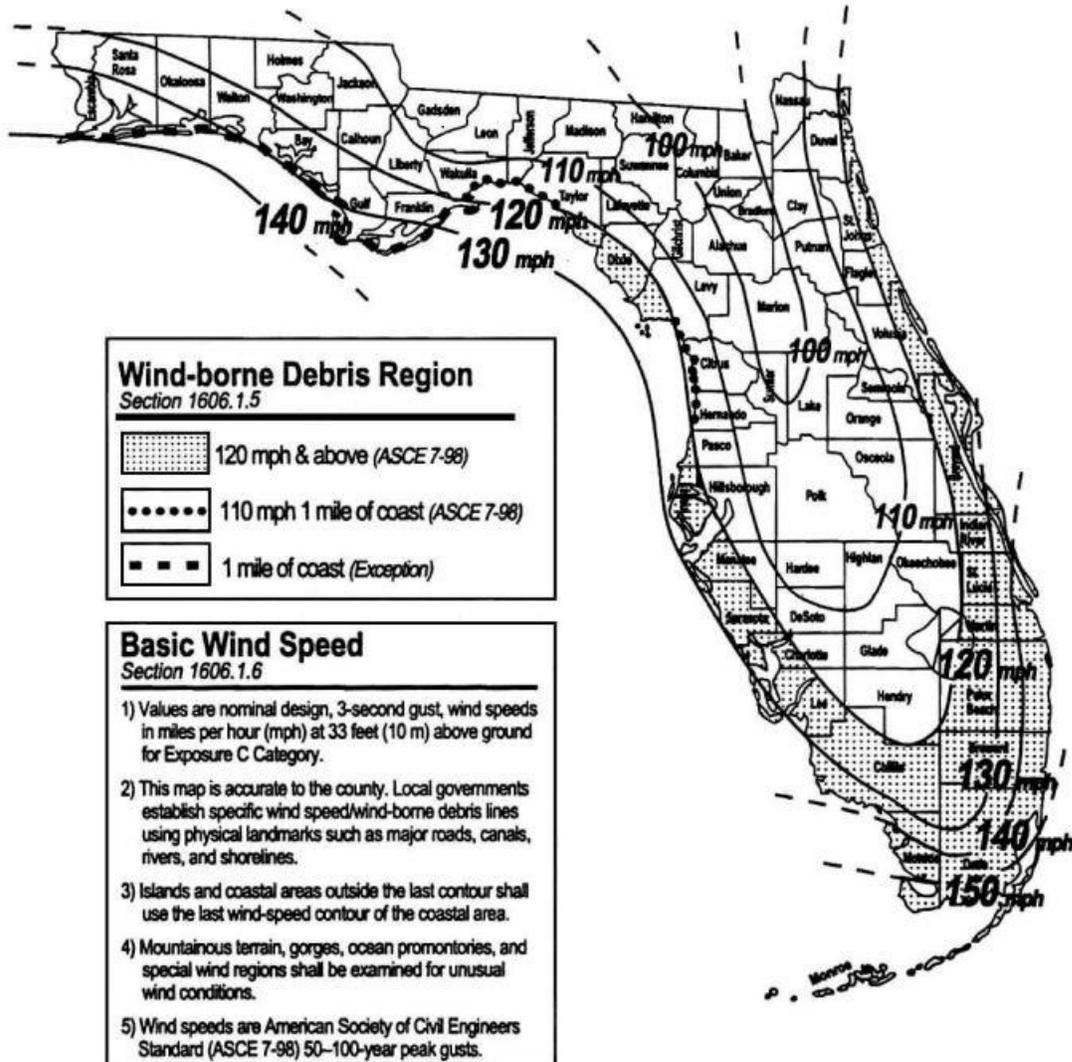


FIGURE 1606
STATE OF FLORIDA
WIND-BORNE DEBRIS REGION & BASIC WIND SPEED

Figure 2-1. Wind Regions in Florida Building Code

Figure 2-1 illustrates the wind speed map for the Florida Building Code (FBC 2001, Figure 1606). The wind speed contours start at 100 mph and go to 150 mph.¹ For buildings located between contours, interpolation is allowable for design. In the absence of interpolation between contours, the building will be designed to the higher of the wind speed contours.

Source: <https://www.flair.com/siteDocuments/ARAwindmitigation.pdf>

Please Note: Miami-Dade and Broward Counties have their countywide wind speed zones that are designated by section 1620.

1620.1

Buildings and structures, and every portion thereof, shall be designed and constructed to meet the requirements of Chapters 26 through 31 of ASCE 7.

Exception: Exposed mechanical equipment or appliances fastened to a roof or installed on the ground in compliance with the code using rated stands, [platforms](#), curbs, slabs, [walls](#), or other means are deemed to comply with the wind resistance requirements of the 2007 Florida Building Code, as amended. Further support or enclosure of such mechanical equipment or appliances is not required by a state or local official having authority to enforce the *Florida Building Code*.

1620.2

Wind velocity (3-second gust) used in structural calculations shall be as follows:

Miami-Dade County (2023)

[Risk Category I](#) Buildings and Structures: 165 mph
[Risk Category II](#) Buildings and Structures: 175 mph
[Risk Category III](#) Buildings and Structures: 186 mph
[Risk Category IV](#) Buildings and Structures: 195 mph

Broward County (2023)

[Risk Category I](#) Buildings and Structures: 156 mph
[Risk Category II](#) Buildings and Structures: 170 mph
[Risk Category III](#) Buildings and Structures: 180 mph
[Risk Category IV](#) Buildings and Structures: 185 mph

* FBC 2010 and 2013 code: **1620.2** Wind velocity (3-second gust) used in structural calculations shall be as follows:

Miami-Dade County (2013)

Risk Category I Buildings and Structures:	165 mph
Risk Category II Buildings and Structures:	175 mph
Risk Category III and IV Buildings and Structures:	186 mph (185mph 2010)

Broward County (2013)

Risk Category I Buildings and Structures:	156 mph
Risk Category II Buildings and Structures:	170 mph
Risk Category III and IV Buildings and Structures:	180 mph

TABLE 1604.5: RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES

TABLE 1604.5 RISK CATEGORY OF BUILDINGS AND OTHER STRUCTURES	
RISK CATEGORY	NATURE OF OCCUPANCY
I	Buildings and other structures that represent a low hazard to human life in the event of failure, including but not limited to: <ul style="list-style-type: none"> • Agricultural facilities. • Certain temporary facilities. • Minor storage facilities. • Screen enclosures.
II	Buildings and other structures except those listed in Risk Categories I, III and IV.
III	Buildings and other structures that represent a substantial hazard to human life in the event of failure, including but not limited to: <ul style="list-style-type: none"> • Buildings and other structures whose primary occupancy is public assembly with an occupant load greater than 300. • Buildings and other structures containing Group E occupancies with an occupant load greater than 250. • Buildings and other structures containing educational occupancies for students above the 12th grade with an occupant load greater than 500. • Group I-2 occupancies with an occupant load of 50 or more resident care recipients but not having surgery or emergency treatment facilities. • Group I-3 occupancies. • Any other occupancy with an occupant load greater than 5,000.^a • Power-generating stations, water treatment facilities for potable water, wastewater treatment facilities and other public utility facilities not included in Risk Category IV. • Buildings and other structures not included in Risk Category IV containing quantities of toxic or explosive materials that: <ul style="list-style-type: none"> Exceed maximum allowable quantities per control area as given in Table 307.1(1) or 307.1(2) or per outdoor control area in accordance with the <i>Florida Fire Prevention Code</i>; and Are sufficient to pose a threat to the public if released.^b
IV	Buildings and other structures designated as essential facilities, including but not limited to: <ul style="list-style-type: none"> • Group I-2 occupancies having surgery or emergency treatment facilities. • Fire, rescue, ambulance and police stations and emergency vehicle garages. • Designated earthquake, hurricane or other emergency shelters. • Designated emergency preparedness, communications and operations centers and other facilities required for emergency response. • Power-generating stations and other public utility facilities required as emergency backup facilities for Risk Category IV structures. • Buildings and other structures containing quantities of highly toxic materials that: <ul style="list-style-type: none"> Exceed maximum allowable quantities per control area as given in Table 307.1(2) or per outdoor control area in accordance with the <i>Florida Fire Prevention Code</i>; and Are sufficient to pose a threat to the public if released.^b • Aviation control towers, air traffic control centers and emergency aircraft hangars. • Buildings and other structures having critical national defense functions. • Water storage facilities and pump structures required to maintain water pressure for fire suppression.

a. For purposes of occupant load calculation, occupancies required by Table 1004.1.2 to use gross floor area calculations shall be permitted to use net floor areas to determine the total occupant load.

b. Where approved by the building official, the classification of buildings and other structures as Risk Category III or IV based on their quantities of toxic, highly toxic or explosive materials is permitted to be reduced to Risk Category II, provided it can be demonstrated by a hazard assessment in accordance with Section 1.5.3 of ASCE 7 that a release of the toxic, highly toxic or explosive materials is not sufficient to pose a threat to the public.

Source:

http://www.floridabuilding.org/fbc/thecode/2017_Code_Development/Wind_Maps/table_1604_5.pdf

Designing for High Winds

Using Wind Speed Maps

Mapped wind speed contour lines delineate wind speed increments of either 5 mph or 10 mph and are not intended to represent a zone's fixed wind speed. Linear interpolation of wind speed between contour lines is permitted. For example, a building situated halfway between the 120 mph and 130 mph contours could be designed for a wind speed of 125 mph based on linear interpolation. Alternatively, a design wind speed of 130 mph could conservatively be used.

IBC RISK CATEGORIES

Risk Category I buildings represent a low hazard to human life in the event of failure, such as agricultural facilities and storage buildings.

Risk Category II buildings are those not defined as Risk Category I, III or IV, which would include houses, apartment buildings, offices and stores.

Risk Category III buildings represent a substantial hazard to human life, such as schools and assembly buildings with an occupant load greater than 300.

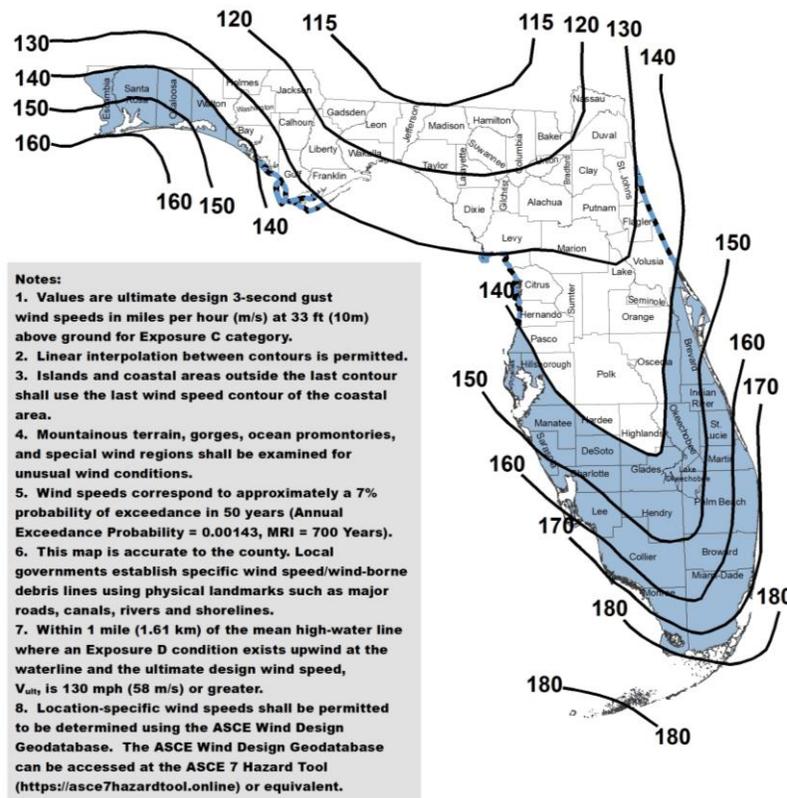
Risk Category IV buildings are designated as essential facilities intended to remain operational in the event of extreme environmental loading such as power-generating stations, police and fire stations, and other structures having critical functions.

Source: http://www.floridabuilding.org/fbc/commission/FBC_0817/Commission/reThink_Wood-Designing_for_High_Winds.pdf

FAQ

1. Windborne Debris Region Map GIS dataset(s)

- FGDL didn't create statewide Windborne Debris Region Map GIS dataset(s) for the 2023 map below. The shoreline/coastline is determined at the county level and the extent of the region is based on that information, so a statewide dataset does not exist.
- Wind-born Debris county-level maps can either be based on the Statewide Wind-borne Debris Region Map or a County Landmark Map. This information is specified in the county and/or city-level adopted municipal code language. Please, contact individual counties and or cities where applicable for this information.



Wind-borne Debris Region

--- 130 MPH and within 1 mile of the mean high-water line, * See Note 7.

■ Designated areas where the ultimate design wind speed, V_{ult} , is 140 mph (63.6 m/s) or greater.

- Is the GIS data available or are the PDF maps available for Counties that have developed their own local landmark maps?
 - Unfortunately, this information is not available. Please, contact individual counties for this information.
- Does FGDL have other Wind Speed GIS Data not currently available for download on FGDL?
 - No, all available data has been posted to FGDL.
- For more information, please see: <https://www.geoplan.ufl.edu/portfolio/wind-speed/>