

Follow-up from 2/7/24 Flood Risk Subcommittee Meeting

General Regulatory Issues Discussed: The following issues were discussed at the Flood Risk Subcommittee Meeting on February 7th. The attached table, identifies existing provisions related to flood risk issues discussed by the Subcommittee.

Generally:

- Floodplain regulations are generally effective and do allow for use of design flood elevations that may exceed FEMA's mapped flood hazard areas but there is a need for better information to address elevations from compound flood events prior to the availability of detailed modeling that is expected to be completed in the next two years.
- Most of the detailed provisions addressing flood risk reduction are in the Land Development Procedures manual, which is currently being updated.
- Additional provisions addressing flood risk reduction can be found in the following chapters of the City's Land Development Regulations:
 - Chapter 652 – Floodplain Management;
 - Chapter 654 – Code of Subdivision Regulations; and
 - Chapter 656 – Zoning Code
- Edits are needed to these three chapters are needed to ensure consistent application of the regulations and to efficiently reduce flood risks in new development, infill and redevelopment projects, each of which has some distinct issues.
- **Freeboard.** Two feet of freeboard is generally used but this is generally based on the FEMA 100-yr flood hazard area boundaries unless supplemental information is available. This applies if any portion of a lot extends into a flood hazard area mapped by FEMA.
- **Fill.** Fill limitations are not very specific and do not do a good job of addressing existing single-family lots. Fill is regulated at the time of subdivision development, but there should be a clearer link between subdivision and zoning regulations. Fill on developed single-family lots has caused some neighborhood flooding problems that are typically addressed on a complaint basis.
- **Affordability.** Balance needed to adequately protect development from flood risks without creating excessive costs for development/housing. While the costs of compliance (procedural and physical) can increase the cost of housing, failure to adequately floodproof properties can lead to higher costs in terms of physical losses and insurance costs.
- **Context Sensitivity.** The regulations need to do a better job of addressing the distinct differences between requirements for new development, infill development and redevelopment. Infill and redevelopment projects are more limited in the range of appropriate flood risk reduction strategies than larger new development sites.

- **Compensatory Storage.** LDPM has compensatory storage requirements (5.2.6. 1, 7.1.6.4) for subdivisions that require adequate water storage area to offset filled water storage capacity. However, these provisions are not applicable to single family residential lots.
- **Wetlands Regulations.** Jacksonville’s terrain has resulted in the migration of wetlands in some areas due to nearby fill, and increased flood risk from wetlands that are in closed basins with inadequate outflow. Local regulations should not be redundant to existing state wetlands regulations, though it should be noted that the focus of the state/federal regulations is wetlands protection and the City’s focus is on development protection, which may require other actions (e.g., compensatory storage for fill and/or outflow creation for wetlands in closed basins).
- **Flooding Not Constrained to Floodplains.** Flood risk reduction strategies need to differentiate between the issues related to uplands, floodplains and wetlands.

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Existing Requirements Related to Flood Risk Reduction:

Type of Regulation		Type of Development			
		Infill Development ⁽¹⁾	Redevelopment/ Renovation ⁽¹⁾	New Development	
Elevation (FFE)	Ord 652.501		See new dev.	See new dev.	Lists site plan or construction document requirements applicable to flood hazard areas
	Ord 652.502 – where BFE or floodway data not available		See new dev.	See new dev.	A zones: establish BFE through flood study, OR as grade + 4ft, OR road crown +1.5ft, OR known flood + 3ft.
	Ord 652.1001-1004		See new dev.	See new dev.	References requirements for buildings and structures in Special Flood Hazard Area (SFHA)
	Ord 652.1207		See new dev.	See new dev.	BFE + 2 ft for buildings or structures in SFHA Fill not to exceed BFE by more than 1 ft, balance to be off-grade or stem wall construction in SFHA
	Ord 652.1305 (Mfg Homes)		See new dev.	See new dev.	BFE + 1ft, OR Fl Building Code to bottom of frame
	Fl Building Code 1612.4.2		See new dev.	See new dev.	BFE + 2ft, OR ASCE 24 Methodology
	LDPM (Section 5.2.6)				BFE + 2ft
Drainage Design Standards (drainage design criteria in LDPM)	Discharge Design Storm	LDPM 5.2.7			If downstream analysis is required: 5, 25, and 100-yr 24-hr storm
	Runoff Design Storm	LDPM 5.3.2			Major outfalls: 25-yr design storm Residential (med-density): 5yr design storm, time of concentration (TC) 20/10min Urban: 5yr design storm, TC 10/10 min
	SWMF Design Storm	LDPM 5.8.3.2.5-6 & 5.8.3.3 & 5.8.3.2.12			Retention/Detention: 100-year rational (allowed if site is <10ac) or 25-year soil conservation service (SCS) model; treatment only basins below adjacent land and projects w/ < 4,000 sf of vehicular use paving and < 9,000 sf of total impervious area can use 5-year rational or 3-year SCS model Pipes: 5-year rational or 3-year SCS model
	Capacity	LDPM 5.1.1 & LDPM 5.8.3.2.		No credit for existing impervious area within Half CFS Restricted Basin	Volumetric Restricted Basins: Meet pre-post volumes for hours 10-17 of 24-hr design storm Half CFS Basins: discharge limited to 0.5 cfs/acre

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		Infill Development ⁽¹⁾	Redevelopment/ Renovation ⁽¹⁾	New Development
	LDPM 5.8.3.2.7		Meet pre-post peak discharge for design storm for new impervious area (implied)	Meet pre-post peak discharge for design storm
Easements/ROW	Ord 654.117			Width adequate for the purpose
	LDPM 5.4.6			20 ft min, plus 2' for every foot of cut below 4 ft
	LDPM 5.6			Outfalls and canals: (< 100ft) 5 ft + width of ditch/canal + 20 ft (>100ft) 35 ft + top of ditch/canal + 35 ft
Retention/Detention	656.399.62-656.399.63 (Arlington Overlay)		Use stormwater storage credits	Retention/detention ponds or drainage conveyance should be incorporated as an amenity into the site design wherever possible. Locate in back of lots. Do not fence.
	LDPM 5.8.3.7			1 ft minimum freeboard for 5-year rational or 3-year SCS design storm. If the basin is higher than adjacent land, then 1 ft minimum freeboard for design storm
LID (encouraged in Duval County LID Design Manual)				
Impervious surface	Ord 654.129	See new dev.	See new dev.	Maximum impervious surface ratios by zoning. (This section is referenced in ratios (656.223, 304, 305, ...) ⁽²⁾
Deviations	Ord 654.137			Deviation may be granted upon written request of the developer setting forth the reasons for each deviation and subject to any conditions the Department may impose
Cut/Fill/Foundation	Location of Fill	LDPM 5.2.3		No obstruction to existing drainage will be permitted unless approved by the City Engineer. This includes flow in streams or ditches, overland flow, underground flow, flow in pipes, or flow in flood plains.

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		Infill Development ⁽¹⁾	Redevelopment/Renovation ⁽¹⁾	New Development
	Ord 652.1207 & 321.109	See new dev.	See new dev.	In SFHA, off-grade or stem wall construction techniques shall be used such that the lot itself is not filled more than one foot above base flood elevation at the site of any structure. The use of fill for structural support is prohibited.
Floodplain fill	LDPM 5.2.5	See new dev.	See new dev.	Must provide compensatory storage of equal volume, OR downstream improvements to prevent rise in BFE

(1) Infill and Redevelopment/Renovation requirements are the same as for new development and subdivisions where indicated. Blanks indicate unclear standards for infill and redevelopment sites.

(2) Zoning district captions refer to maximum coverage by buildings and refer to section 654.129. This excludes driveways, patios, sidewalks, and other impervious surfaces on lot-by-lot development of single-family and duplex dwellings.

Notes:

- 655.112(c) specifies that in order to obtain CCAS or CRC approval, there must be guarantees of public utilities or the development must retain the total volume of stormwater run-off on-site.