

**City of Delano
County of Wright
State of Minnesota**

Ordinance O-24-05

7.5 Standards for All FF-2 District Uses:

7.51 Fill shall be properly compacted, and the slopes shall be properly protected by the use of riprap, vegetative cover or other acceptable method. The Federal Emergency Management Agency (FEMA) has established criteria for removing the special flood hazard area designation for certain structures properly elevated on fill above the 100-year flood elevation - FEMA's requirements incorporate specific fill compaction and side slope protection standards for multistucture or multi-lot developments. These standards should be investigated prior to the initiation of site preparation if a change of special flood hazards area designations is requested.

7.52 Floodplain developments shall not adversely affect the hydraulic capacity of the channel and adjoining floodplain of any tributary watercourse or drainage system where a floodway or other encroachment limit has not been specified on the Official Zoning Map.

SECTION 8.0 General Floodplain District

8.1 Permitted Uses in General Floodplain District

8.11 Until the floodway is delineated, allowable uses will be restricted to those listed in the Floodway District, Section 5.0.

8.12 All other uses are subject to a floodway/flood fringe determination as provided in Section 8.4, in addition to the standards provided in Sections 8.2 and 8.3. Permitted uses shall be determined as follows:

- A. If the development is determined to be in the Floodway District, Section 5.0 applies.
- B. If the development is determined to be in the Flood Fringe One District or Flood Fringe Two District, Sections 6.0 or 7.0 applies.

8.2 Determining Flood Elevations

8.21 All development requires a determination of the Base Flood Elevation (BFE). Exceptions to this requirement include projects that restore the site to the previous cross-sectional area, such as shore stabilization or culvert replacement projects. Base Flood Elevations (BFE) may be found using best available data from any Federal, State, or other source (including MNDNR's Lake & Flood Elevations Online (LFEO) Viewer).

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8.22 The Regulatory Flood Protection Elevation (RFPE) can be determined by assuming a one-half (0.5) foot stage increase to accommodate for future cumulative impacts. A stage increase does not need to be assumed along lakes, wetlands, and other basins that are not affected by velocities.

8.3 Encroachment Analysis

8.31 Encroachments due to development may not allow stage increases more than one-half (0.5) foot at any point, unless through a map revision following the procedures in Sections 12.15 and 15.0. This evaluation must include the cumulative effects of previous encroachments and must be documented with hydrologic and hydraulic analysis performed by a professional engineer or using other standard engineering practices. A lesser water surface elevation increase than one-half (0.5) foot is required if, due to the water surface level increase, increased flood damage would potentially result.

8.32 Alterations or changes that result in stage decreases are allowed and encouraged.

8.4 Standards for the Analysis of Floodway Boundaries

8.41 Requirements for Detailed Studies. Any development, as requested by the Zoning Administrator, shall be subject to a detailed study to determine the Regulatory Flood Protection Elevation (RFPE) and the limits of the Floodway District. This determination must be consistent with the minimum standards for hydrologic and hydraulic mapping standards and techniques, as detailed in Minnesota Rules, part 6120.5600, Subp. 4 and *FEMA Guidelines and Standards for Flood Risk Analysis and Mapping*, as revised. Additionally:

- A. A regulatory floodway necessary to carry the discharge of the one-percent annual chance flood must be selected without increasing the water surface elevation more than one-half (0.5) foot at any point. This determination should include the cumulative effects of previous encroachments. A lesser water surface elevation increase than one-half (0.5) foot is required if, due to the water surface level increase, increased flood damages would potentially result; and
- B. An equal degree of encroachment on both sides of the stream within the reach must be assumed in computing floodway boundaries, unless topography, existing development patterns, and comprehensive land use plans justify a modified approach, as approved by the Department of Natural Resources.

8.42 Other Acceptable Methods. For areas where a detailed study is not available or required:

- A. Development prohibited in floodways (e.g. most buildings) requires a floodway/flood fringe determination to verify the development is within the flood fringe. This determination must be done by a professional engineer or utilize other accepted engineering practices. The

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Department of Natural Resources may also provide technical assistance and must approve any alternative methods used to determine floodway boundaries.

B. For areas where the floodway has not been determined in and along lakes, wetlands, and other basins, the following methodology may be used as an alternative to Item A above, provided these areas are not affected by velocities and the lot is able to accommodate a building site above the Regulatory Flood Protection Elevation (RFPE):

- (1) All areas that are at or below the ordinary high water level, as defined in Minnesota Statutes, section 103G.005, Subd. 14, will be considered floodway, and all areas below the Base Flood Elevation (BFE) but above the ordinary high water level will be considered flood fringe, provided that within 25 feet of the ordinary high water level, or within the Shore Impact Zone as identified in the community's Shoreland ordinance, whichever is greater, land alterations shall be restricted to:
 - a. The minimum required to accommodate beach areas, access areas, and accessory structures as permitted, not to exceed a volume greater than 10 cubic yards; projects involving volumes exceeding 10 cubic yards require floodway/flood fringe determination in accordance with the procedures in Section 8.4, item A; and
 - b. The minimum required to accommodate shoreline stabilization projects to correct an identified erosion problem as verified by a qualified resource agency or the zoning administrator.

9.0 SUBDIVISION STANDARDS

9.1 Subdivisions. All subdivided land must meet the following requirements. Manufactured home parks and recreational vehicle parks or campgrounds are considered subdivisions under this ordinance.

9.11 All lots within floodplain districts must be suitable for a building site outside of the Floodway District and the FF-2 Flood Fringe Two District.

9.12 Subdivision of lands within the floodplain districts may not be approved if the cost of providing governmental services would impose an unreasonable economic burden on the City of Delano.

9.13 All subdivisions must have vehicular access both to the subdivision and to the individual building sites no lower than two feet below the Regulatory Flood Protection Elevation (RFPE), unless a flood warning/emergency evacuation plan has been approved by the City of Delano.

9.14 The Floodway and Flood Fringe District boundaries, the Regulatory Flood Protection Elevation (RFPE) and the required elevation of all access roads must be clearly identified on all required subdivision drawings and platting documents.