

ORDINANCE NO. 2006-11

**BOROUGH OF MALVERN
CHESTER COUNTY, PENNSYLVANIA**

AN ORDINANCE AMENDING THE BOROUGH OF MALVERN ZONING ORDINANCE OF 2003, BY REPEALING ARTICLE XXII, SECTION 2201 ENTITLED "FLOODPLAIN OVERLAY DISTRICT" AND REPLACING IT WITH A NEW SECTION, FOR THE PURPOSE OF COMPLYING WITH CHANGES TO THE NATIONAL FLOOD INSURANCE PROGRAM AND PENNSYLVANIA ACT 166

The Borough Council of Malvern Borough, Chester County, Pennsylvania, hereby

ENACTS and **ORDAINS** as follows:

Article XXII, Section 2201 of the Malvern Borough Zoning Ordinance of 2003 is hereby **REPEALED** and is **REPLACED** with the following:

Section 2201 FLOODPLAIN OVERLAY DISTRICT

- A. **Intent.** The specific intent of these provisions related to lands within the floodplain is to prevent the loss of property and life, the creation of health and safety hazards, the disruption of commerce and governmental services, the extraordinary and unnecessary expenditure of public funds for flood protection and relief, and the impairment of the tax base by:
1. Regulating uses, activities and development, which, acting alone or in combination with other existing or future uses, activities and development, will cause unacceptable increases in flood heights, velocities and frequencies.
 2. Restricting or prohibiting certain uses, activities and development from locating within areas subject to flooding.
 3. Requiring all those uses, activities and developments that do occur in floodprone areas to be protected and/or floodproofed against flooding and flood damage.
 4. Protecting individuals from buying lands, buildings, and structures which are unsuited for intended purposes because of flood hazards.
- B. **Identification.**
1. Overlay Concept. The Floodplain Overlay District described above shall be an overlay to the existing underlying zoning districts, as shown on the Official Zoning Ordinance Map, and, as such, the provisions for the Floodplain Overlay District shall serve as a supplement to the underlying district provisions. Should the Floodplain Overlay District be determined as inapplicable to any tract by reason of amendment by Borough Council, interpretation by the Zoning Hearing Board, or the decision of a court of competent jurisdiction, the underlying zoning provisions shall be deemed applicable. Where there happens to be any conflict

between provisions or requirements of any of the Floodplain Overlay District and those of any underlying district, the more restrictive provisions shall apply.

2. District Boundary. For the purposes of this Ordinance, the Floodplain Overlay District shall be those areas of Malvern Borough, Chester County, which are subject to the one hundred (100) year flood, as identified in the Flood Insurance Study (FIS) dated September 29, 2006, and the accompanying maps as prepared for by the Federal Emergency Management Agency (FEMA), or the most recent revision thereof. Including all digital data developed as part of the Flood Insurance Study, which is declared to be a part of this Ordinance and a copy of which shall be kept at the Malvern Borough Offices. The Floodplain Overlay District is also referred to herein as the "identified floodplain area."
3. District Boundary Changes. The delineation of any of the Floodplain Overlay District may be revised by Malvern Borough where natural or man-made changes have occurred and/or more detailed studies conducted or undertaken by the U.S. Army Corps of Engineers, a River Basin Commission, or other qualified agency or individual comments, the need or possibility of such change. However, prior to any such change, approval must be obtained from the Federal Emergency Management Agency (FEMA).
 - a. For the purposes of this Ordinance, the one hundred (100) year flood elevation shall be used as the basis for regulation. When available, information from other Federal, State, and other acceptable sources shall be used to determine the one hundred (100) year elevation, as well as a floodway area, if possible. When no other information is available, the one hundred (100) year elevation shall be determined by using a point on the boundary of the identified floodplain area which is nearest the construction site in question.
 - b. In lieu of the above, the Borough may require the applicant to determine the elevation with hydrologic and hydraulic engineering techniques. Hydrologic and hydraulic analyses shall be undertaken only by professional engineers or others of demonstrated qualifications, who shall certify that the technical methods used correctly reflect currently accepted technical concepts. Studies, analyses, computations, etc., shall be submitted in sufficient detail to allow a thorough technical review by the Borough Engineer.

C. General Provisions.

1. Applicability. These provisions shall apply to all lands within the jurisdiction of Malvern Borough and shown as identified in Section 2201.B.
2. Compliance. No land shall be hereafter used or developed, and no structure shall be used, located, relocated, constructed, reconstructed, enlarged or structurally altered, except in full compliance with the terms and provisions of this Ordinance, and any other applicable ordinances and regulations which apply to uses and development within the jurisdiction of this Ordinance.
3. Warning and Disclaimer of Liability. The degree of flood protection sought by the provisions of this Ordinance is considered reasonable for regulatory purposes and is based on acceptable engineering methods of study. Larger floods may occur on rare occasions. Flood heights may be increased by man-made or natural causes, such as ice jams and bridge opening

restricted by debris. This Ordinance does not imply that areas outside the identified Floodplain Overlay District, or that land uses permitted within such district, will be free from flooding or flood damage. This Ordinance shall not create liability on the part of Malvern Borough or any officer or employees thereof for any flood damages that result from reliance on this Ordinance or any administrative decision lawfully made thereunder.

D. Use Regulations.

1. Permitted Uses. The following uses and activities are permitted, provided they are in compliance with the provisions of the underlying district and are not prohibited by another ordinance and provided that they do not require structures, fill or storage of materials and equipment.
 - a. Agricultural uses, such as general farming, pasture, grazing, outdoor plant nurseries, horticulture, truck farming, forestry, sod farming and wild crop harvesting.
 - b. Public and private recreational uses and activities, such as parks, day camps, picnic grounds, golf courses, boat launching and swimming areas, hiking and horseback riding trails, wildlife and nature preserves, fish hatcheries, and fishing areas.
 - c. Municipal use.
 - d. Temporary uses such as carnivals or festivals provided that natural vegetative ground cover remains as it was prior to the temporary event and is not destroyed, removed or altered in a way to create sedimentation of erosion.
 - e. Accessory uses, such as yard areas, open space areas, gardens, play areas and pervious parking areas, driveways, and roadways.

E. Special Provisions.

1. All uses, activities and development occurring within the Floodplain Overlay District shall be undertaken only in strict compliance with the provisions of this Ordinance and with all other applicable codes and ordinances, such as the Malvern Borough Building Code, and Malvern Borough Subdivision and Land Development Ordinance.
2. Under no circumstances shall any use, activity and/or development adversely affect the capacity of the channels of any watercourse, drainage ditch or any other drainage facility or system.
3. Prior to any proposed alteration or relocation of any stream, watercourse, etc., within the municipality, a permit shall be obtained from the PA Department of Environmental Protection's Regional Office. Further notification of the proposal shall be given to all affected adjacent municipalities. Copies of such notification shall be forwarded to the Federal Emergency Management Agency (FEMA).
4. Development Which May Endanger Human Life – Hazardous Materials. In a Floodplain Overlay district, no building or structure may be used for the production or storage of any of the following materials or substances, or which will be used for any activity requiring the maintenance of a supply of any of the following materials or substances on the premises, in addition to all other applicable provisions:

- a. Acetone
 - b. Ammonia
 - c. Benzene
 - d. Calcium carbide
 - e. Carbon disulfide
 - f. Celluloid
 - g. Chlorine
 - h. Hydrochloric acid
 - i. Hydrocyanic acid
 - j. Magnesium
 - k. Nitric acid and oxides of nitrogen
 - l. Petroleum products (gasoline, fuel oil, etc.)
 - m. Phosphorus
 - n. Potassium
 - o. Sodium
 - p. Sulfur and sulfur products
 - q. Pesticides (including insecticides, fungicides and rodenticides)
 - r. Radioactive substances, insofar as such substances are not otherwise regulated
 - s. Any other substances added by further amendment by Pennsylvania DCED.
5. Prohibited Uses. The following obstructions and activities are prohibited if located partially or entirely within any identified Floodplain Overlay District:
- a. Hospitals – public or private.
 - b. Nursing homes – public or private.
 - c. Jails.
 - d. New individual mobile home or new mobile home parks or new mobile home subdivision and substantial improvements to existing mobile home parks.
 - e. Cemeteries.
 - f. Sanitary Landfills, dumps, and junkyards.

F. **Existing Structures and Nonconforming Uses in the Floodplain Overlay District.** A building, structure or use of a building, structure or premises which lawfully existed before the enactment of these provisions, but which is not in conformity with these provisions, may be continued, subject to the following conditions:

- 1. No expansion or enlargement of an existing structure and/or use shall be allowed within any Floodplain Overlay District that would cause any increase in flood heights.
- 2. Any modification, alteration, reconstruction or improvement of any kind to an existing structure and/or use to an extent or amount of fifty (50) percent or more of its market value shall constitute a substantial improvement and shall be undertaken only as a variance pursuant to Section 2201.G of this Ordinance.
- 3. Any modification, alteration, reconstruction or improvement of any kind to an existing building, structure and/or use to an extent or amount of less than 50 percent of its market value, shall be elevated and/or floodproofed to the standards for completely dry floodproofing contained in the publication, “Flood Proofing Regulations” (U.S. Army Corps of Engineers, June 1972), or some other equivalent watertight standard.

The above activity shall also address the requirements of the 34 PA Code Chapters 401-405, as amended and the 2003 IBC (Sec. 3402.1 and 1612.4) and the 2003 IRC (Secs. R105.3.1.1 and 323.1.4).

4. Any modification, alteration, reconstruction, or improvement of any kind that meets the definition of “repetitive loss” shall be undertaken only in full compliance with the provisions of this Ordinance.
5. The requirements of 34 PA Code Chapter 401-405, as amended and the 2003 IRC (Secs. R102.7.1, R105.3.1, R105.3.1.1 and Appendices E and J) or the latest revision thereof and the 2003 IBC (Secs. 101.3, 3403.1 and Appendix G) or the latest revision thereof shall also be utilized in conjunction with the provisions of this section.

G. **Variations within the Floodplain Overlay District.** If compliance with any of the requirements of this Ordinance would result in an unnecessary hardship for the applicant or landowner, the Zoning Hearing Board may, upon request, grant relief from the strict application of the requirements.

1. Procedures and Requirements. Requests for variances shall be considered by the Zoning Hearing Board in accordance with Article XXVIII and the following:
 - a. No variance shall be granted which would allow any of the development specifically prohibited in Section 2201.E.
 - b. If granted, a variance shall involve only the least modification necessary to provide relief.
 - c. In granting any variance, the Zoning Hearing Board shall attach whatever reasonable conditions and safeguards it considers necessary in order to protect the public health, safety and welfare and to achieve the objectives of this Ordinance.
 - d. Whenever a variance is granted, the Zoning Hearing Board shall notify the applicant in writing that:
 - 1) The granting of the variance may result in increased premium rates for flood insurance.
 - 2) Such variances may increase the risks to life and property.
 - e. In reviewing any request for a variance, the Zoning Hearing Board shall consider, but not be limited to the following:
 - 1) That there is good and sufficient cause.
 - 2) Failure to grant a variance could result in exceptional hardship to the applicant.
 - 3) The granting of the variance will not result in an unacceptable or prohibited increase in flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public or conflict with any other applicable local or state ordinance regulations.

- f. A complete record of all variance requests and related actions shall be maintained by the Zoning Hearing Board. In addition, a report of all variances granted during the year shall be included in the annual report to the Federal Emergency Management Agency (FEMA).
2. **Review Factors.** In passing upon applications for variances, the Zoning Hearing Board shall consider all relevant factors and procedures specific in other sections of the Zoning Ordinance, and:
 - a. The danger to life and property due to increased flood heights or velocities caused by encroachments.
 - b. The danger that materials may be swept onto other lands or downstream to the injury of others.
 - c. The proposed water supply and sanitation systems and the ability of these systems to prevent disease, contamination and unsanitary conditions.
 - d. The susceptibility of the proposed facility and its contents to flood damage and the effect of such damage on the individual owners.
 - e. The importance of the services provided by the proposed facility to the community.
 - f. The availability of alternative locations not subject to flooding for the proposed use.
 - g. The compatibility of the proposed use with existing development and that anticipated in the foreseeable future.
 - h. The relationship of the proposed use to the Borough Comprehensive Plan.
 - i. The safety of access to the property in times of flood of ordinary and emergency vehicles.
 - j. The expected heights, velocity, duration, rate of rise and sediment transport of the floodwaters expected at the site.
 - k. The requirements of the National Flood Insurance Program Regulations, Part 60 – Criteria for Land Management and Use, Section 60.3 a and b.
 - l. Such other factors which are relevant to the purposes of this Ordinance.
3. **Supplemental Technical Review.** The Zoning Hearing Board may refer any application and accompanying documentation pertaining to any request for a variance to any qualified engineer or other qualified person or agency for technical assistance in evaluating the proposed project in relation to flood heights and velocities and the adequacy of the plans for protection and other related matters.

H. **Construction.** All building and structures, whether residential or nonresidential, shall be designed, located, constructed and maintained in a manner which shall be consistent with the following:

1. Fully protect the health and safety of the general public and any occupants of the structure. At a minimum, all new structures shall be designed, located and constructed so that:

- a. The structure will have the capability of resisting the one hundred (100) year flood without any lateral movement or damage to either the structure itself, or to any of its equipment or contents below the one hundred (100) year flood elevation.
 - b. The lowest floor elevation (including basement) will be at least one and one-half (1½) feet above the one hundred (100) year flood elevation.
 - c. The occupants of the structure can remain inside for an indefinite period of time and be safely evacuated at any time during the one hundred (100) year flood.
 - d. All buildings and structures shall be designed, located and constructed so as to offer the minimum obstruction to the flow of water and shall be designed to have a minimum effect upon the flow and height of floodwater.
2. Prevent any significant possibility of pollution, increased flood levels or flows or frequency of floods, obstructing or impeding the direction, velocity, or flow of flood waters, or debris endangering life and property.
 3. All public and private utilities and facilities, such as sewer, gas, electricity and water systems, must be located and constructed to minimize or eliminate flood damage and infiltration. Sewer facilities and systems shall be designed to prevent the discharge of untreated sewage into floodwaters. No part of any on-site sewage system shall be located within any identified floodplain area, except in strict compliance with all state and local regulations for such systems. If any such system is permitted, it shall be located so as to avoid impairment to it, or contamination. Adequate drainage must be provided to reduce exposure to floods and convey the flow of run-off in a safe and efficient manner, designed to ensure proper drainage along streets and appropriate channels or pipe, and provide positive drainage away from buildings. The proposed development shall comply with all applicable requirements of the National Flood Insurance Program, Regulations Sections (Sec. 60.3 a and b).
 4. The finished elevation of all new streets shall not be below the one hundred (100) year flood elevation.
 5. Proposed building, structures, or uses shall be setback a minimum of fifty (50) feet from the edge of a watercourse.
 6. All materials that are buoyant, flammable, explosive, or, in time of flooding, could be injurious to human, animal or plant life, and not listed in Section 2201.E, shall be stored at or above the one hundred (100) year flood elevation and/or be flood-proofed to the maximum extent possible.
 7. Fully enclosed space below the lowest floor (including basement) is prohibited. Partially enclosed space below the lowest floor (including basement) which will be used solely for the parking of a vehicle, building access, or incidental storage in an area other than a basement, shall be designed and constructed to allow for the automatic entry and exit of floodwaters for the purpose of equalizing hydrostatic forces on exterior walls. The term "partially enclosed space", also includes crawl spaces.

Designs for meeting this requirement must either be certified by a registered professional engineer or architect, or meet or exceed the following minimum criteria:

- a. a minimum of two openings having a net total area of not less than one (1) square inch for every square foot of enclosed space.
- b. the bottom of all openings shall be no higher than one (1) foot above grade.
- c. openings may be equipped with screens, louvers, etc. or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.

Consideration may be given to the requirements of 34 PA Code (Chapters 401-405 as amended) and the 2003 IRC (Secs.R323.2.2 and R323.1.4) and the 2003 IBC (Secs. 1612.4, 1612.5, 1202.3.2 and 1203.3.3).

8. Fill

If fill is used, it shall:

- a. extend laterally at least fifteen (15) feet beyond the building line from all points;
- b. consist of soil or small rock materials only - Sanitary Landfills shall not be permitted;
- c. be compacted to provide the necessary permeability and resistance to erosion, scouring, or settling;
- d. be no steeper than one (1) vertical to two (2) horizontal, feet unless substantiated data, justifying steeper slopes are submitted to, and approved by the Building Permit Officer; and,
- e. be used to the extent to which it does not adversely affect adjacent properties.

9. Drainage Facilities

Storm drainage facilities shall be designed to convey the flow of storm water runoff in a safe and efficient manner. The system shall insure proper drainage along streets, and provide positive drainage away from buildings. The system shall also be designed to prevent the discharge of excess runoff onto adjacent properties.

10. Anchoring

- a. All buildings and structures shall be firmly anchored in accordance with accepted engineering practices to prevent flotation, collapse, or lateral movement.
- b. All air ducts, large pipes, storage tanks, and other similar objects or components located below the Regulatory Flood Elevation shall be securely anchored or affixed to prevent flotation.
- c. The design and construction requirements of the UCC pertaining to this subsection as referred to in 34 PA Code (Chapters 401-405 as amended) and contained in the 2003 IBC (Secs. 1605.2.2, 1605.3.1.2, 1612.4 and Appendix G501.3), the IRC (Secs. R301.1 & R323.1.1) and ASCE 24-98 (Sec. 5.6) shall be utilized.

11. Floors, Walls and Ceilings

- a. Wood flooring used at or below the Regulatory Flood Elevation shall be installed to accommodate a lateral expansion of the flooring, perpendicular to the flooring grain without causing structural damage to the building.
- b. Plywood used at or below the Regulatory Flood Elevation shall be of a "marine" or "water-resistant" variety.
- c. Walls and ceilings at or below the Regulatory Flood Elevation shall be designed and constructed of materials that are "water-resistant" and will withstand inundation.
- d. Windows, doors, and other components at or below the Regulatory Flood Elevation shall be made of metal or other "water-resistant" material.
- e. The provisions of the UCC pertaining to this subsection and referenced in the 34 PA Code (Chapters 401-405 as amended) and contained in the 2003 IBC (Secs. 801.1.3, 1403.2, 1403.4, 1403.6 and 1404.2), the 2003 IRC (Secs. R323.1.7 & R501.3) and ASCE 24-98 (Chapter 6).

12. Paints and Adhesives

- a. Paints and other finishes used at or below the Regulatory Flood Elevation shall be of "marine" or "water-resistant" quality.
- b. Adhesives used at or below the Regulatory Flood Elevation shall be of a "marine" or "water-resistant" variety.
- c. All wooden components (doors, trim, cabinets, etc.) shall be finished with a "marine" or "water-resistant" paint or other finishing material.
- d. The standards and specifications contained in 34 PA Code (Chapters 401-405, as amended) the 2003 IBC (Secs. 801.1.3, 1403.7 and Appendix G) and the 2003 IRC (Secs. R323.1.7).

13. Electrical Components

- a. Electrical distribution panels shall be at least three (3) feet above the one hundred (100) year flood elevation.
- b. Separate electrical circuits shall serve lower levels and shall be dropped from above.
- c. The provisions pertaining to the above provisions and referenced in the UCC and 34 PA Code (Chapters 401-405) as amended and contained in the 2003 IBC (Sec. 1612.4), the IRC (Sec. R323.1.5), the 2000 IFGC (Secs. R301.5 and R1601.3.8) and ASCE 24 (Chapter 8) shall be utilized.

14. Equipment

Water heaters, furnaces, air conditioning and ventilating units, and other mechanical or utility equipment or apparatus shall not be located below the Regulatory Flood Elevation.

The provisions pertaining to the above provision and referenced in the UCC and 34 PA Code Chapters 401-405), as amended and contained in the 2003 IBC (Sec. 1612.4), the 2003 IRC (Secs.R323.1.5) the 2000 IFGC (Secs. R301.5 and R1601.3.8) and ASCE 24 (Chapter 8) shall be utilized.

15. Fuel Supply Systems

All gas and oil supply systems shall be designed to prevent the infiltration of flood waters into the system and discharges from the system into flood waters. Additional provisions shall be made for the drainage of these systems in the event that flood water infiltration occurs.

16. Uniform Construction Code Coordination

The Standards and Specifications contained 34 PA Code (Chapters 401-405), as amended and not limited to the following provisions shall apply to the above and other sections and sub-sections of this ordinance, to the extent that they are more restrictive and/or supplement the requirements of this ordinance.

International Building Code (IBC) 2003 or the latest edition thereof:
Secs. 801, 1202, 1403, 1603, 1605, 1612, 3402, and Appendix G.

International Residential Building Code (IRC) 2003 or the latest edition thereof:
Secs. R104, R105, R109, R323, Appendix AE101, Appendix E and Appendix J.

I. **Permitting.** If any proposed construction or development is located entirely or partially within any identified floodplain area, applicants for building permits shall provide all the following information in sufficient detail and clarity to enable the Zoning Officer to determine that such proposals minimize flood damage and conform to this and all other applicable ordinances, that all utilities and facilities are located and constructed to minimize flood damage, and that adequate drainage is provided so as to reduce exposure to flooding.

1. A completed building permit application form.
2. Evidence as to conformance with applicable state and federal laws and permits.
3. A site plan at a scale of one (1) inch equals one hundred (100) feet or less, depicting the following information:
 - a. North arrow, scale, date, and topographic contour lines at two (2) foot intervals.
 - b. Description of the proposed use.
 - c. All property and lot lines including dimensional standards.
 - d. The elevation of the one hundred (100) year flood, and the location of any existing bodies of water or watercourses, identified floodplain areas, and, if available, the flow of water including direction and velocities.

- e. Location of all existing and proposed buildings, structures, streets, and other improvements, and elevations of buildings and streets showing the one hundred (100) year flood.
- f. Regarding Section 2202.E, information about any materials to be stored within the one-hundred (100) year floodplain, and safeguard being taken to prevent spills or leaks during a one hundred (100) year flood.
- g. Where any excavation or grading is proposed, proof of meeting the requirements of the Department of Environmental Protection, to implement and maintain erosion and sedimentation control.
- h. A statement from a qualified registered professional engineer or architect stating that the proposed construction or development has been adequately designed to withstand the pressures, velocities, impact, and uplift forces associated with the one hundred (100) year flood. Such statement shall include a description of the type and extent of floodproofing measures incorporated into the design of the structure and/or the development.
- i. The proposed lowest floor elevation of any proposed building based upon North American Vertical Datum of 1988;
- j. Supplemental information as may be necessary under 34 PA Code, Chapter 401-405 as amended, and Sec.1612.5.1, Section 104.7 and 109.3 of the 2003 IBC and Section R106.1.3 and R104.7 of the 2003 IRC.

ORDAINED by Borough Council this 5th day of September, 2006.

Henry H. Briggs
President, Malvern Borough Council

APPROVED by the Mayor, this 5th day of September, 2006

Gerard J. McGlone, Jr.
Mayor

ENACTED this 5th day of September, 2006

Sandra L. Kelley
Borough Secretary