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Title: AN ORDINANCE relating to compliance with the National Flood Insurance Program; and amending Ordinance 10870, Section 138, as amended, and K.C.C. 21A.06.490, Ordinance 10870, Section 470, as amended, and K.C.C. 21A.24.230, Ordinance 10870, Section 471, as amended, and K.C.C. 21A.24.240, Ordinance 10870, Section 472, as amended, and K.C.C. 21A.24.250 and Ordinance 10870, Section 474, as amended, and K.C.C. 21A.24.270.

Sponsors: Jane Hague, Julia Patterson, Reagan Dunn, Larry Gossett, Dow Constantine, Bob Ferguson, Larry Phillips, Kathy Lambert, Pete von Reichbauer

Indexes: Flood Control

Code sections: 21A.06.490 -, 21A.24.230 -, 21A.24.240 -, 21A.24.250 -, 21A.24.270 -

Attachments: 1. 16686.pdf, 2. 2009-0473 Att 2 (amendment 1).doc, 3. 2009-0473 Adoption Notice.doc, 4. 2009-0473 Attachment 1 to Transmittal Letter--Fiscal Note.xls, 5. 2009-0473 Attachment 2 to Transmittal Letter--Summary of Changes.doc, 6. 2009-0473 Attachment 3 to Transmittal Letter--Environmental Checklist.pdf, 7. 2009-0473 Attachment 4 to Transmittal Letter--SEPA DNS for Amendments to KC Floodplain Regulations.pdf, 8. 2009-0473 Attachment 5 to Transmittal Letter--CTED 60-Day Notice.pdf, 9. 2009-0473 Attachment 6 to Transmittal Letter--CTED Letter Dated May 21, 2009.pdf, 10. 2009-0473 Attachment 7 to Transmittal Letter--News Release.doc, 11. 2009-0473 Attachment 8 to Transmittal Letter--Notice of Public Hearing.doc, 12. 2009-0473 Hearing Notice.doc, 13. 2009-0473 Hearing Notice.doc, 14. 2009-0473 Revised Staff Report - flood ins revised.doc, 15. 2009-0473 Staff Report - flood ins.doc, 16. 2009-0473 Transmittal Letter.doc, 17. Amendment #1 10-26-09.pdf

Date	Ver.	Action By	Action	Result
10/26/2009	2	Metropolitan King County Council	Hearing Held	
10/26/2009	3	Metropolitan King County Council	Passed as Amended	Pass
9/9/2009	1	Physical Environment Committee	Amended	Pass
9/9/2009	2	Physical Environment Committee	Recommended Do Pass Substitute	Pass
8/17/2009	1	Metropolitan King County Council	Introduced and Referred	

AN ORDINANCE relating to compliance with the National Flood Insurance Program; and amending Ordinance 10870, Section 138, as amended, and K.C.C. 21A.06.490, Ordinance 10870, Section 470, as amended, and K.C.C. 21A.24.230, Ordinance 10870, Section 471, as amended, and K.C.C. 21A.24.240, Ordinance 10870, Section 472, as amended, and K.C.C. 21A.24.250 and Ordinance 10870, Section 474, as amended, and K.C.C. 21A.24.270.

STATEMENT OF FACTS:

1. King County and nearly twenty-one thousand other communities across the United States and its territories participate in the National Flood Insurance Program by adopting and enforcing floodplain management regulations to reduce future flood damage.

2. The National Flood Insurance Program makes federally backed flood insurance available to homeowners, renters and business owners in these communities.

3. Participation in the National Flood Insurance Program is voluntary; however federally-backed flood insurance is not available in communities that do not participate in the National Flood Insurance Program.

4. The Federal Emergency Management Agency ("FEMA"), or state agency acting on behalf of FEMA, conducts Community Assistance Visits to provide technical assistance to communities and to determine if the community is in compliance with the National Flood Insurance Program.

5. The Washington State Department of Ecology, acting on behalf of FEMA, conducted a Community Assistance Visit for King County on January 15, 2009.

6. The Community Assistance Visit identified issues with King County flood regulations that must be corrected in order for King County's regulations to be in compliance with the National Flood Insurance Program.

7. The issues identified generally related to performance standards for the AO ("shallow flooding") flood zone. In addition, King County flood regulations allow a Professional Engineer to prepare a Federal Emergency Management Agency Elevation Certificate; only Professional Land Surveyors are allowed to complete Elevation Certificates.

8. Adoption of this ordinance will resolve the flood regulation issues identified through the Community Assistance Visit.

BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

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SECTION 1. Ordinance 10870, Section 138, as amended, and K.C.C. 21A.06.490 are each hereby amended to read as follows:

Flood protection elevation: an elevation that is three-feet above the base flood elevation. For flood zones that establish flood depths instead of base flood elevations, the flood protection elevation is the depth number specified in feet on the flood insurance rate map plus one foot. The flood protection elevation is measured from the highest adjacent grade of the footprint of the existing or proposed structure. If the flood insurance rate map does not specify a depth, the flood protection elevation is at least two feet as measured from the highest adjacent grade of the footprint of the existing or proposed structure.

SECTION 2. Ordinance 10870, Section 470, as amended, and K.C.C. 21A.24.230 are each hereby amended to read as follows:

A. A flood hazard area consists of the following components:

1. Floodplain;
2. Zero-rise flood fringe;
3. Zero-rise floodway;
4. FEMA floodway; and
5. Channel migration zones.

B. The department shall delineate a flood hazard area after reviewing base flood elevations and flood hazard data for a flood having a one percent chance of being equaled or exceeded in any given year, often referred to as the "one-hundred-year flood." The department shall determine the base flood for existing conditions. If a basin plan or hydrologic study including projected flows under future developed conditions has been completed and approved by King County, the department shall use these future flow projections. Many flood hazard areas are mapped by FEMA in a scientific and engineering report entitled "The Flood Insurance Study for King County and Incorporated Areas." When there are multiple sources of flood hazard data for flood plain boundaries, regulatory floodway boundaries, base flood elevations, or flood cross sections, the

department may determine which data most accurately classifies and delineates the flood hazard area. The department may utilize the following sources of flood hazard data for floodplain boundaries, regulatory floodway boundaries, base flood elevations or cross sections when determining a flood hazard area:

1. Flood Insurance Rate Maps;

2. Flood Insurance Studies;

3. Preliminary Flood Insurance Rate Maps;

4. Preliminary Flood Insurance Studies;

5. Draft flood boundary work maps and associated technical reports;

6. Critical area reports prepared in accordance with FEMA standards contained in 44 C.F.R. Part 65 and consistent with the King County Surface Water Design Manual provisions for floodplain analysis;

7. Letter of map amendments;

8. Letter of map revisions;

9. Channel migration zone maps and studies;

10. Historical flood hazard information; ((~~and~~))

11. Wind and wave data provided by the United States Army Corps of Engineers; and

12. Any other available data that accurately classifies and delineates the flood hazard area or base flood elevation.

C. A number of channel migration zones are mapped by the county for portions of river systems. These channel migration zones and the criteria and process used to designate and classify channel migration zones are specified by public rule adopted by the department. An applicant for a development proposal may submit a critical area report to the department to determine channel migration zone boundaries or classify channel migration hazard areas on a specific property if there is an apparent discrepancy between the site-specific conditions or data and the adopted channel migration zone maps.

SECTION 3. Ordinance 10870, Section 471, as amended, and K.C.C. 21A.24.240 are each hereby

amended to read as follows:

The following development standards apply to development proposals and alterations on sites within the zero-rise flood fringe:

A. Development proposals and alterations shall not reduce the effective base flood storage volume of the floodplain. A development proposal shall provide compensatory storage if grading or other activity displaces any effective flood storage volume. Compensatory storage is not required for grading or fill placed within the foundation of an existing residential structure to bring the interior foundation grade to the same level as the lowest adjacent exterior grade. Compensatory storage shall:

1. Provide equivalent volume at equivalent elevations to that being displaced. For this purpose, equivalent elevations means having similar relationship to ordinary high water and to the best available ten-year, fifty-year and one-hundred-year water surface profiles;

2. Hydraulically connect to the source of flooding;

3. Provide compensatory storage in the same construction season as when the displacement of flood storage volume occurs and before the flood season begins on September 30 for that year; and

4. Occur on the site. The director may approve equivalent compensatory storage off the site if legal arrangements, acceptable to the department, are made to assure that the effective compensatory storage volume will be preserved over time. The director may approve of off site compensatory storage through a compensatory storage bank managed by the department of natural resources and parks;

B. A structural engineer shall design and certify all elevated buildings and submit the design to the department;

C. A civil engineer shall prepare a base flood depth and base flood velocity analysis and submit the analysis to the department. A base flood depth and base flood velocity analysis is not required for agricultural structures that will not be used for human habitation. The director may waive the requirement for a base flood depth and base flood velocity analysis for agricultural structures that are not used for human habitation.

Development proposals and alterations are not allowed if the base flood depth exceeds three feet and the base flood velocity exceeds three feet per second, except that the director may approve development proposals and alterations in areas where the base flood depth exceeds three feet and the base flood velocity exceeds three feet per second for the following projects;

1. Agricultural accessory structures;

2. Roads and bridges;

3. Utilities;

4. Surface water flow control or surface water conveyance systems;

5. Public park structures; and

6. Flood hazard mitigation projects, such as, but not limited to construction, repair or replacement of flood protection facilities or for building elevations or relocations;

D. Subdivisions, short subdivisions, urban planned developments and binding site plans shall meet the following requirements:

1. New building lots shall include five thousand square feet or more of buildable land outside the zero -rise floodway;

2. All utilities and facilities such as sewer, gas, electrical and water systems are consistent with subsections E., F. and I. of this section;

3. A civil engineer shall prepare detailed base flood elevations in accordance with FEMA guidelines for all new lots;

4. A development proposal shall provide adequate drainage in accordance with the King County Surface Water Design Manual to reduce exposure to flood damage; and

5. The face of the recorded subdivision, short subdivision, urban planned development or binding site plan shall include the following for all lots:

a. building setback areas restricting structures to designated buildable areas:

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b. base flood data and sources and flood hazard notes including, but not limited to, base flood elevation, required flood protection elevations, the boundaries of the floodplain and the zero-rise floodway, if determined, and channel migration zone boundaries, if determined; and

c. include the following notice:

"Lots and structures located within flood hazard areas may be inaccessible by emergency vehicles during flood events. Residents and property owners should take appropriate advance precautions.";

E. New residential structures and substantial improvements of existing residential structures shall meet the following standards:

1. Elevate the lowest floor, including basement, to the flood protection elevation;

2. Do not fully enclose portions of the structure that are below the lowest floor area;

3. Design and construct the areas and rooms below the lowest floor to automatically equalize hydrostatic and hydrodynamic flood forces on exterior walls by allowing for the entry and exit of floodwaters as follows:

a. provide a minimum of two openings on each of two opposite side walls in the direction of flow, with each of those walls having a total open area of not less than one square inch for every square foot of enclosed area subject to flooding;

b. design and construct the bottom of all openings so they are no higher than one foot above grade; and

c. screens, louvers or other coverings or devices are allowed over the opening if they allow the unrestricted entry and exit of floodwaters;

4. Use materials and methods that are resistant to and minimize flood damage; and

5. Elevate above or dry-proof all electrical, heating, ventilation, plumbing, air conditioning equipment and other utilities that service the structure, such as duct-work to the flood protection elevation;

F. New nonresidential structures and substantial improvements of existing nonresidential structures

shall meet the following standards:

1. Elevate the lowest floor to the flood protection elevation;

2. Dry flood-proof the structure to the flood protection elevation to meet the following standards:

a. the applicant shall provide certification by a civil or structural engineer that the dry flood-proofing methods are adequate to withstand the flood-depths, pressures, velocities, impacts, uplift forces and other factors associated with the base flood. After construction, the engineer shall certify that the permitted work conforms to the approved plans and specifications; and

b. approved building permits for dry flood-proofed nonresidential structures shall contain a statement notifying applicants that flood insurance premiums are based upon rates for structures that are one foot below the elevation to which the building is dry-floodproofed;

3. Nonresidential agricultural accessory buildings that do not equal or exceed a maximum assessed value of sixty-five thousand dollars may be designed and oriented to allow the free passage of floodwaters through the building in a manner affording minimum flood damage provided they meet the standards in subsection F.4. through F.6. of this section. Nonresidential agricultural accessory buildings that equal or exceed sixty-five thousand dollars may apply for an alteration exception pursuant to K.C.C. 21A.24.070. Nonresidential agricultural accessory buildings that do not meet the elevation standard in subsection F. 1. of this section or the dry flood-proofing standard in subsection F.2. of this section will be assessed at the flood insurance rate based on the risk to which the building is exposed;

4. Use materials and methods that are resistant to and minimize flood damage;

5. Design and construct the areas and rooms below the lowest floor to automatically equalize hydrostatic and hydrodynamic flood forces on exterior walls by allowing for the entry and exit of floodwaters as follows:

a. provide a minimum of two openings on each of two opposite side walls in the direction of flow, with each of those walls having a total open area of not less than one square inch for every square foot of

enclosed area subject to flooding;

b. design the bottom of all openings is no higher than one foot above grade; and

c. screens, louvers or other coverings or devices are allowed if they do not restrict entry and exit of floodwaters; and

6. Dry flood proof all electrical, heating, ventilation, plumbing, air conditioning equipment and other utility and service facilities to, or elevated above, the flood protection elevation;

G. Anchor all new construction and substantially improved structures to prevent flotation, collapse or lateral movement of the structure. The department shall approve the method used to anchor the new construction;

H. Newly sited manufactured homes and substantial improvements of existing manufactured homes shall meet the following standards:

1. Manufactured homes shall meet all the standards in this section for residential structures and the following standards:

a. anchor all manufactured homes; and

b. install manufactured homes using methods and practices that minimize flood damage;

2. All manufactured homes within a new mobile home park or expansion of an existing mobile home park must meet the requirements for flood hazard protection for residential structures; and

3. Only manufactured homes are allowed in a new or existing mobile home park located in a flood hazard area;

I. Public and private utilities shall meet the following standards:

1. Dry flood-proof new and replacement utilities including, but not limited to, sewage treatment and storage facilities, to, or elevate above, the flood protection elevation;

2. Locate new on-site sewage disposal systems outside the floodplain. When there is insufficient area outside the floodplain, new on-site sewage disposal systems are allowed only in the zero-rise flood fringe.

Locate on-site sewage disposal systems in the zero-rise flood fringe to avoid:

a. impairment to the system during flooding;

b. contamination from the system during flooding;

3. Design all new and replacement water supply systems to minimize or eliminate infiltration of floodwaters into the system;

4. Above-ground utility transmission lines, except for electric transmission lines, are allowed only for the transport of nonhazardous substances; and

5. Bury underground utility transmission lines transporting hazardous substances at a minimum depth of four feet below the maximum depth of scour for the base flood, as predicted by a civil engineer, and achieve sufficient negative buoyancy so that any potential for flotation or upward migration is eliminated;

J. Critical facilities are allowed within the zero-rise flood fringe only when a feasible alternative site is not available and the following standards are met:

1. Elevate the lowest floor to the five-hundred year floodplain elevation or three or more feet above the base flood elevation, whichever is higher;

2. Dry flood-proof and seal structures to ensure that hazardous substances are not displaced by or released into floodwaters; and

3. Elevate access routes to or above the base flood elevation from the critical facility to the nearest maintained public street or roadway;

K. New construction or expansion of existing farm pads is allowed only as follows:

1. A farm pad is allowed only if there is no other suitable holding area on the site outside the floodplain;

2. Construct the farm pad to the standards in an approved farm management plan prepared in accordance with K.C.C. 21A.24.051 and K.C.C. chapter 21A.30. The farm management plan shall demonstrate compliance with the following:

a. flood storage compensation consistent with subsection A. of this section;

b. siting and sizing that do not increase base flood elevations consistent with K.C.C. 21A.24.250.B.; and

c. siting that is located in the area least subject to risk from floodwaters; ((~~and~~))

L. New construction or expansion of existing livestock manure storage facilities is only allowed as follows:

1. The livestock manure storage facility is only allowed if there is not a feasible alternative area on the site outside the floodplain;

2. Construct the livestock manure storage facility to the standards in an approved farm management plan prepared in accordance with K.C.C. 21A.24.051 and K.C.C. chapter 21A.30. The farm management plan shall demonstrate compliance with the following:

a. flood storage compensation consistent with subsection A. of this section;

b. siting and sizing that do not increase base flood elevations consistent with K.C.C. 21A.24.250.B. and 21A.24.260.D;

c. dry flood-proofing to the flood protection elevation; and

d. siting that is located in the area least subject to risk from floodwaters; and

M. Recreational vehicles must be on site for fewer than one hundred eighty days or be fully licensed and ready for highway use.

SECTION 4. Ordinance 10870, Section 472, as amended, and K.C.C. 21A.24.250 are each hereby amended to read as follows:

The following development standards apply to development proposals and alterations on sites within the zero-rise floodway:

A. The development standards that apply to the zero-rise flood fringe also apply to the zero-rise floodway. The more restrictive requirements shall apply where there is a conflict;

B. A development proposal shall not increase the base flood elevation except as follow:

1. Revisions to the Flood Insurance Rate Map are approved by FEMA, in accordance with 44 CFR 70, to incorporate the increase in the base flood elevation; and

2. Appropriate legal documents are prepared and recorded in which all property owners affected by the increased flood elevations consent to the impacts on their property;

C. If post and piling construction techniques are used, the following are presumed to produce no increase in the base flood elevation and a critical areas report is not required to establish this fact:

1. New residential structures outside the FEMA floodway on lots in existence before November 27, 1990, that contain less than five thousand square feet of buildable land outside the zero-rise floodway if the total building footprint of all existing and proposed structures on the lot does not exceed two-thousand square feet;

2. Substantial improvements of existing residential structures in the zero-rise floodway, but outside the FEMA floodway, if the footprint is not increased; or

3. Substantial improvements of existing residential structures that meet the standards for new residential structures in K.C.C. ((~~21A.24.240.D~~)) 21A.24.240.E;

D. When post or piling construction techniques are not used, a critical areas report is required in accordance with K.C.C. 21A.24.110 demonstrating that the proposal will not increase the base flood elevation;

E. During the flood season from September 30 to May 1 the following are not allowed to be located in the zero-rise floodway;

1. All temporary seasonal shelters, such as tents ((~~and recreational vehicles~~)), awnings and greenhouses, except for those used for agricultural activities and domestic household use; and

2. Staging or stockpiling of equipment, materials or substances that the director determines may be hazardous to the public health, safety or welfare except for those used for agricultural activities and domestic household use;

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F. New residential structures and substantial improvements to existing residential structures or any structure accessory to a residential use shall meet the following standards:

1. Locate the structures outside the FEMA floodway;

2. Locate the structures only on lots in existence before November 27, 1990, that contain less than five thousand square feet of buildable land outside the zero-rise floodway; and

3. To the maximum extent practical, locate the structures the farthest distance from the channel, unless the applicant can demonstrate that an alternative location is less subject to risk;

G. Public and private utilities are only allowed if:

1. The department determines that a feasible alternative site is not available;

2. A waiver is granted by the Seattle-King County department of public health for new on-site sewage disposal facilities;

3. The utilities are dry flood-proofed to or elevated above the flood protection elevation;

4. Above-ground utility transmission lines, except for electrical transmission lines, are only allowed for the transport of nonhazardous substances; and

5. Underground utility transmission lines transporting hazardous substances are buried at a minimum depth of four feet below the maximum dept of scour for the base flood, as predicted by a civil engineer, and achieve sufficient negative buoyancy so that any potential for flotation or upward migration is eliminated;

H. Critical facilities, except for those listed in subsection I. of this section are not allowed within the zero-rise floodway; and

I. Structures and installations that are dependent upon the zero-rise floodway are allowed in the zero-rise floodway if the development proposal is approved by all agencies with jurisdiction and meets the development standards for the ((~~zero-rize~~)) zero-rise floodway. These structures and installations may include, but are not limited to:

1. Dams or diversions for water supply, flood control, hydroelectric production, irrigation or fisheries

enhancement;

2. Flood damage reduction facilities, such as levees, revetments and pumping stations;

3. Stream bank stabilization structures only if a feasible alternative does not exist for protecting structures, public roadways, flood protection facilities or sole access routes. Bank stabilization projects must be consistent with the Integrated Streambank Protection Guidelines (Washington State Aquatic Habitat Guidelines Program, 2002) and use bioengineering techniques to the maximum extent practical. An applicant may use alternative methods to the guidelines if the applicant demonstrates that the alternative methods provide equivalent or better structural stabilization, ecological and hydrological functions and salmonid habitat;

4. Surface water conveyance facilities;

5. Boat launches and related recreation structures;

6. Bridge piers and abutments; and

7. Approved aquatic area or wetland restoration projects including, but not limited to, fisheries enhancement projects.

SECTION 5. Ordinance 10870, Section 474, as amended, and K.C.C. 21A.24.270 are each hereby amended to read as follows:

A. For all new structures or substantial improvements in a flood hazard area, the applicant shall provide a FEMA elevation certificate completed by a ((~~civil engineer or~~)) land surveyor licensed by the state of Washington documenting:

1. The actual as-built elevation of the lowest floor, including basement; ((~~and~~))

2. The actual as-built elevation to which the structure is dry flood-proofed, if applicable; and

3. If the structure has a basement.

B. The applicant shall submit a FEMA elevation certificate before the issuance of a certificate of occupancy or temporary certificate of occupancy, whichever occurs first. For unoccupied structures, the applicant shall submit the FEMA elevation certificate before the issuance of the final letter of completion or

temporary letter of completion, whichever occurs first.

C. ((~~The engineer or land surveyor shall indicate if the structure has a basement.~~

~~D.~~)) The department shall maintain the certifications required by this section for public inspection and for certification under the National Flood Insurance Program.

SECTION 6. If any provision of this ordinance or its application to any person or

circumstance is held invalid, the remainder of the ordinance or the application of the provision to other persons or circumstances is not affected.

Official paper, 30 days prior

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