

1 ..Title

2 AN ORDINANCE relating to compliance with the National
3 Flood Insurance Program; amending Ordinance 10870,
4 Section 294, and K.C.C. 21A.06.1270, Ordinance 10870,
5 Section 470, and K.C.C. 21A.24.230, Ordinance 10870,
6 Section 471, and K.C.C. 21A.24.240, Ordinance 10870,
7 Section 472, and K.C.C. 21A.24.250, and Ordinance
8 10870, Section 474, and K.C.C. 21A.24.270, all as
9 amended.

10 ..Body

11 STATEMENT OF FACTS:

- 12 1. King County and nearly 20,000 other communities across the United
13 States and its territories participate in the National Flood Insurance
14 Program by adopting and enforcing floodplain management regulations to
15 reduce future flood damage
- 16 2. The National Flood Insurance Program makes federally backed flood
17 insurance available to homeowners, renters and business owners in these
18 communities.
- 19 3. Participation in the National Flood Insurance Program is voluntary;
20 however federally backed flood insurance is not available in communities
21 that do not participate in the National Flood Insurance Program.
- 22 4. The Federal Emergency Management Agency (FEMA), or a state
23 agency acting on behalf of FEMA, conducts Community Assistance Visits
24 to provide technical assistance to communities and to determine if the
25 community is in compliance with the National Flood Insurance Program.

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

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

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

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

40 BE IT ORDAINED BY THE COUNCIL OF KING COUNTY:

41 SECTION 1. Ordinance 10870, Section 294, as amended, and K.C.C.
42 21A.06.1270 are each hereby amended to read as follows:

43 Substantial improvement:

44 A.1. Any maintenance, repair, structural modification, addition or other
45 improvement of a structure, the cost of which equals or exceeds fifty percent of the market
46 value of the structure either:

47 a. before the improvement or repair is started; or

48 b. if the structure has been damaged and is being restored, before the damage
49 occurred.

50 2. For purposes of this definition, the cost of any improvement is considered to
51 begin when the first alteration of any wall, ceiling, floor or other structural part of the
52 building begins, whether or not that alteration affects the external dimensions of the
53 structure; and

54 B. Does not include ~~((either))~~:

55 1. ~~((Any-p))~~Projects for improvement of a structure to correct existing violations
56 of state or local health, sanitary or safety code specifications that have been identified by
57 the local code enforcement official and that are the minimum necessary to ensure safe
58 living conditions; ~~((or))~~

59 2. Costs to elevate an existing residential structure to the flood protection
60 elevation using Federal Emergency Management Agency grant mitigation funding; or

61 3. ~~((any-a))~~Alteration of a structure listed on the national Register of Historic
62 Places or a state or local inventory of historic resources.

63 SECTION 2. Ordinance 10870, Section 470, as amended, and K.C.C.
64 21A.24.230 are each hereby amended to read as follows:

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

- 66 1. Floodplain;
- 67 2. Zero-rise flood fringe;
- 68 3. Zero-rise floodway;
- 69 4. FEMA floodway; and
- 70 5. Channel migration zones.

71 B. The department shall delineate a flood hazard area after reviewing base flood
72 elevations and flood hazard data for a flood having a one percent chance of being equaled
73 or exceeded in any given year, often referred to as the "one-hundred-year flood." The
74 department shall determine the base flood for existing conditions. If a basin plan or
75 hydrologic study including projected flows under future developed conditions has been
76 completed and approved by King County, the department shall use these future flow
77 projections. Many flood hazard areas are mapped by FEMA in a scientific and engineering
78 report entitled "The Flood Insurance Study for King County and Incorporated Areas."
79 When there are multiple sources of flood hazard data for flood plain boundaries, regulatory
80 floodway boundaries, base flood elevations, or flood cross sections, the department may
81 determine which data most accurately classifies and delineates the flood hazard area. The
82 department may utilize the following sources of flood hazard data for floodplain
83 boundaries, regulatory floodway boundaries, base flood elevations or cross sections when
84 determining a flood hazard area:

- 85 1. Flood Insurance Rate Maps;
- 86 2. Flood Insurance Studies;
- 87 3. Preliminary Flood Insurance Rate Maps;
- 88 4. Preliminary Flood Insurance Studies;
- 89 5. Draft flood boundary work maps and associated technical reports;
- 90 6. Critical area reports prepared in accordance with FEMA standards contained in
91 44 C.F.R. Part 65 and consistent with the King County Surface Water Design Manual
92 provisions for floodplain analysis;
- 93 7. Letter of map amendments;

- 94 8. Letter of map revisions;
- 95 9. Channel migration zone maps and studies;
- 96 10. Historical flood hazard information; (~~and~~)
- 97 11. Wind and wave data provided by the United States Army Corps of Engineers;
- 98 and
- 99 12. Any other available data that accurately classifies and delineates the flood
- 100 hazard area or base flood elevation.

101 C. A number of channel migration zones are mapped by the county for portions of

102 river systems. These channel migration zones and the criteria and process used to

103 designate and classify channel migration zones are specified by public rule adopted by the

104 department. An applicant for a development proposal may submit a critical area report to

105 the department to determine channel migration zone boundaries or classify channel

106 migration hazard areas on a specific property if there is an apparent discrepancy between

107 the site-specific conditions or data and the adopted channel migration zone maps.

108 SECTION 3. Ordinance 10870, Section 471, as amended, and K.C.C.

109 21A.24.240 are each hereby amended to read as follows:

110 The following development standards apply to development proposals and

111 alterations on sites within the zero-rise flood fringe:

112 A. Development proposals and alterations shall not reduce the effective base flood

113 storage volume of the floodplain. A development proposal shall provide compensatory

114 storage if grading or other activity displaces any effective flood storage volume.

115 Compensatory storage is not required for grading or fill placed within the foundation of an

116 existing residential structure to bring the interior foundation grade to the same level as the
117 lowest adjacent exterior grade. Compensatory storage shall:

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

122 2. Hydraulically connect to the source of flooding;

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

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

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

133 C. A civil engineer shall prepare a base flood depth and base flood velocity
134 analysis and submit the analysis to the department. A base flood depth and base flood
135 velocity analysis is not required for agricultural structures that will not be used for human
136 habitation. The director may waive the requirement for a base flood depth and base flood
137 velocity analysis for agricultural structures that are not used for human habitation.
138 Development proposals and alterations are not allowed if the base flood depth exceeds

139 three feet and the base flood velocity exceeds three feet per second, except that the director
140 may approve development proposals and alterations in areas where the base flood depth
141 exceeds three feet and the base flood velocity exceeds three feet per second for the
142 following projects;

- 143 1. Agricultural accessory structures;
- 144 2. Roads and bridges;
- 145 3. Utilities;
- 146 4. Surface water flow control or surface water conveyance systems;
- 147 5. Public park structures; and
- 148 6. Flood hazard mitigation projects, such as, but not limited to construction, repair
149 or replacement of flood protection facilities or for building elevations or relocations;

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

- 152 1. New building lots shall include five thousand square feet or more of buildable
153 land outside the zero-rise floodway;
- 154 2. All utilities and facilities such as sewer, gas, electrical and water systems are
155 consistent with subsections E., F. and I. of this section;
- 156 3. A civil engineer shall prepare detailed base flood elevations in accordance with
157 FEMA guidelines for all new lots;
- 158 4. A development proposal shall provide adequate drainage in accordance with
159 the King County Surface Water Design Manual to reduce exposure to flood damage; and
- 160 5. The face of the recorded subdivision, short subdivision, urban planned
161 development or binding site plan shall include the following for all lots:

162 a. building setback areas restricting structures to designated buildable areas:
163 b. base flood data and sources and flood hazard notes including, but not limited
164 to, base flood elevation, required flood protection elevations, the boundaries of the
165 floodplain and the zero-rise floodway, if determined, and channel migration zone
166 boundaries, if determined; and

167 c. include the following notice:

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

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

173 1. Elevate the lowest floor, including basement, to the flood protection elevation;
174 2. Do not fully enclose portions of the structure that are below the lowest floor
175 area;

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

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

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

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

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

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

191 F. New nonresidential structures and substantial improvements of existing
192 nonresidential structures shall meet the following standards:

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

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

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

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

205 3. Nonresidential agricultural accessory buildings that do not equal or exceed a
206 maximum assessed value of sixty-five thousand dollars may be designed and oriented to

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

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

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

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

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

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

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

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

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

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

235 a. anchor all manufactured homes; and

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

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

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

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

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

246 2. Locate new on-site sewage disposal systems outside the floodplain. When
247 there is insufficient area outside the floodplain, new on-site sewage disposal systems are
248 allowed only in the zero-rise flood fringe. Locate on-site sewage disposal systems in the
249 zero-rise flood fringe to avoid:

250 a. impairment to the system during flooding;

- 251 b. contamination from the system during flooding;
- 252 3. Design all new and replacement water supply systems to minimize or eliminate
253 infiltration of floodwaters into the system;
- 254 4. Above-ground utility transmission lines, except for electric transmission lines,
255 are allowed only for the transport of nonhazardous substances; and
- 256 5. Bury underground utility transmission lines transporting hazardous substances
257 at a minimum depth of four feet below the maximum depth of scour for the base flood, as
258 predicted by a civil engineer, and achieve sufficient negative buoyancy so that any potential
259 for flotation or upward migration is eliminated;
- 260 J. Critical facilities are allowed within the zero-rise flood fringe only when a
261 feasible alternative site is not available and the following standards are met:
- 262 1. Elevate the lowest floor to the five-hundred year floodplain elevation or three
263 or more feet above the base flood elevation, whichever is higher;
- 264 2. Dry flood-proof and seal structures to ensure that hazardous substances are not
265 displaced by or released into floodwaters; and
- 266 3. Elevate access routes to or above the base flood elevation from the critical
267 facility to the nearest maintained public street or roadway;
- 268 K. New construction or expansion of existing farm pads is allowed only as follows:
- 269 1. A farm pad is allowed only if there is no other suitable holding area on the site
270 outside the floodplain;
- 271 2. Construct the farm pad to the standards in an approved farm management plan
272 prepared in accordance with K.C.C. 21A.24.051 and K.C.C. chapter 21A.30. The farm
273 management plan shall demonstrate compliance with the following:

- 274 a. flood storage compensation consistent with subsection A. of this section;
- 275 b. siting and sizing that do not increase base flood elevations consistent with
- 276 K.C.C. 21A.24.250.B.; and
- 277 c. siting that is located in the area least subject to risk from floodwaters; and
- 278 L. New construction or expansion of existing livestock manure storage facilities is
- 279 only allowed as follows:
- 280 1. The livestock manure storage facility is only allowed if there is not a feasible
- 281 alternative area on the site outside the floodplain;
- 282 2. Construct the livestock manure storage facility to the standards in an approved
- 283 farm management plan prepared in accordance with K.C.C. 21A.24.051 and K.C.C.
- 284 chapter 21A.30. The farm management plan shall demonstrate compliance with the
- 285 following:
- 286 a. flood storage compensation consistent with subsection A. of this section;
- 287 b. siting and sizing that do not increase base flood elevations consistent with
- 288 K.C.C. 21A.24.250.B. and 21A.24.260.D);
- 289 c. dry flood-proofing to the flood protection elevation; and
- 290 d. siting that is located in the area least subject to risk from floodwaters.
- 291 M. During the flood season from September 30 to May 1 the following are not
- 292 allowed to be located in the zero-rise floodfringe;
- 293 1. All temporary seasonal shelters, such as tents and recreational vehicles; and
- 294 2. Staging or stockpiling of equipment, materials or substances that the director
- 295 determines may be hazardous to the public health, safety or welfare;

296 SECTION 4. Ordinance 10870, Section 472, as amended, and K.C.C.

297 21A.24.250 are each hereby amended to read as follows:

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

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

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

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

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

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

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

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

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

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

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

325 1. ~~All temporary seasonal shelters, such as tents and recreational vehicles; and~~

326 2. ~~Staging or stockpiling of equipment, materials or substances that the director~~
327 ~~determines may be hazardous to the public health, safety or welfare;))~~

328 ((F-)) New residential structures and substantial improvements to existing
329 residential structures or any structure accessory to a residential use shall meet the following
330 standards:

331 1. Locate the structures outside the FEMA floodway;

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

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

338 ((G-))F. Public and private utilities are only allowed if:

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

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

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

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

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

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

352 ~~((I.))~~H. Structures and installations that are dependent upon the zero-rise floodway
353 are allowed in the zero-rise floodway if the development proposal is approved by all
354 agencies with jurisdiction and meets the development standards for the zero-rise floodway.

355 These structures and installations may include, but are not limited to:

356 1. Dams or diversions for water supply, flood control, hydroelectric
357 production, irrigation or fisheries enhancement;

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

360 3. Stream bank stabilization structures only if a feasible alternative does not exist
361 for protecting structures, public roadways, flood protection facilities or sole access routes.

362 Bank stabilization projects must be consistent with the Integrated Streambank Protection

363 Guidelines (Washington State Aquatic Habitat Guidelines Program, 2002) and use
364 bioengineering techniques to the maximum extent practical. An applicant may use
365 alternative methods to the guidelines if the applicant demonstrates that the alternative
366 methods provide equivalent or better structural stabilization, ecological and hydrological
367 functions and salmonid habitat;

368 4. Surface water conveyance facilities;

369 5. Boat launches and related recreation structures;

370 6. Bridge piers and abutments; and

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

373 SECTION 5. Ordinance 10870, Section 474, as amended, and K.C.C.

374 21A.24.270 are each hereby amended to read as follows:

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

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

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

381 3. If the structure has a basement.

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

385 issuance of the final letter of completion or temporary letter of completion, whichever
386 occurs first.

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

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