

Introduced by: Mayor  
Date: 04/20/21  
Action: 05/18/21  
Vote: Adopted

**KENAI PENINSULA BOROUGH  
ORDINANCE 2021-17**

**AN ORDINANCE AMENDING KPB 21.06 FLOODPLAIN MANAGEMENT TO ADOPT FLOOD DEPTHS FOR THREE NEIGHBORHOODS IN THE SEWARD MAPPED FLOOD DATA AREA AND TO INCORPORATE THE SEWARD MAPPED FLOOD DATA AREA INTO THE MINIMUM NATIONAL FLOOD INSURANCE STANDARDS**

**WHEREAS**, since 1988 the Kenai Peninsula Borough has had an accredited floodplain management program under the National Flood Insurance Program (NFIP) which makes federal disaster insurance, federal hazard mitigation grants, federal subsidized mortgages, and affordable individual homeowner flood insurance available within the borough; and

**WHEREAS**, continued participation in the NFIP is contingent upon continued good standing in that program by meeting the minimum requirements set forth by the Federal Emergency Management Agency (FEMA); and

**WHEREAS**, the Seward Bear Creek Flood Service Area (SBCFSA) was created in 2003 to provide flood planning, protection, and mitigation services for flooding within the service area; and

**WHEREAS**, the Seward Mapped Flood Data Area (SMFDA) was established in 2009 by Ordinance 2009-09 to regulate areas of known riverine and alluvial flood hazards outside the FEMA mapped flood hazard areas; and

**WHEREAS**, the SMFDA was scheduled to sunset in 2013 when FEMA updated the Flood Insurance Study for the Seward-Bear Creek area; and

**WHEREAS**, in 2013, the FEMA mapping update of the Seward-Bear Creek area only included riverine flood zones and did not include known flood hazard areas on alluvial fans as delineated in the SMFDA; and

**WHEREAS**, on August 6, 2013, the assembly voted to enact Ordinance 2013-29 to continue the administration of KPB 21.06.045 as it pertained to the SMFDA; and

**WHEREAS**, the SBCFSA contracted with Alaska Water Resources (AWR) Engineering to acquire a flood risk assessment and hydraulic and hydrologic report of three flood-prone neighborhoods within the SMFDA; and

**WHEREAS**, the borough is required by FEMA, and through its floodplain ordinances, to utilize the best available data; and

**WHEREAS**, this ordinance will clarify and define different flood protection elevation standards based on minimum NFIP regulations; and

**WHEREAS**, each flood protection elevation standard will be integrated into code using a new term, "Flood Protection Elevation"; and

**WHEREAS**, the borough and its residents' best interests will be served by adopting the 2021 Flood Risk Assessment and Hydrologic & Hydraulic Report prepared by AWR Engineering and amending its floodplain management ordinance; and

**WHEREAS**, the Seward-Bear Creek Flood Service Area Board, at its regular meeting of April 5, 2021, recommended approval; and

**WHEREAS**, the Kenai Peninsula Borough Planning Commission, at its regular meeting of April 26, 2021, recommended approval by unanimous consent;

**NOW, THEREFORE, BE IT ORDAINED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH:**

**SECTION 1.** That KPB 21.06.030 is hereby amended as follows:

21.06.030. General provisions.

A. *Lands to Which this Chapter Applies.* This chapter shall apply to all flood hazard areas within the Kenai Peninsula Borough exclusive of the cities of Homer, Kenai, Seward, and Soldotna.

B. *Basis for Establishing Flood Hazard Areas.* Flood hazard areas are identified as follows:

1. By the areas of special flood hazard identified by the Federal Insurance Administration in the scientific and engineering report entitled "Flood Insurance Study" (FIS) for the Kenai Peninsula Borough, Alaska dated May 19, 1981, revised on July 5, 1983, December 6, 1999, [AND] September 27, 2013, and October 20, 2016. These areas are depicted on the effective [F]Flood Insurance Rate Map (FIRM) and Digital Flood Insurance Rate Map (DFIRM) Panels. The map panels numbered 020012-1350 and 1700 have been deleted and the areas depicted by these panels are not subject to the terms of this chapter. Excluding these panels, the [FLOOD INSURANCE RATE MAPS]FIRMs are adopted by reference and declared to be a part of this chapter. The [FLOOD INSURANCE

RATE MAPS]FIRMs are on file at the planning department. The best available information for flood hazard as outlined in KPB 21.06.040(C)(3) shall be the basis for regulation until a new FIRM or DFIRM is issued which incorporates the base flood plain data obtained pursuant to that section.

2. The 1986, 1995, and 2006 KPB GIS mapped the Seward [M]Mapped [F]Flood [D]Data [A]Area (SMFDA) within the Seward-Bear Creek Flood Service Area [(SMFDA)]outside the city limits of Seward, not including any Special Flood Hazard Area identified in a current, effective FIRM or DFIRM. A map showing this floodplain and flood data and a list of properties represented by this map shall be retained by the planning department and made available to the public. If any portion of a lot is included in the flood data mapped area, the entire lot shall be subject to [THE PROVISIONS OF THIS CHAPTER]the permit application review process set forth in 21.06.040(A). [SPECIAL PROVISIONS FOR DEVELOPMENT PERMITS IN THE KPB MAPPED FLOOD DATA AREA ARE SET FORTH IN KPB 21.06.045.]Data available from other federal, state or other sources shall be reviewed and reasonably utilized including but not limited to the following:
  - a. "Flood of October 1986 at Seward Alaska," USGS Water-Resources Investigation Report 87-4278. Jones, S.H., and Zenone, Chester. (1988).
  - b. "Hydrologic Reconnaissance near Fourth of July Creek, Seward, Alaska." USGS Water Resources Investigations 81-21. Nelson, G.L. (1981).
  - c. "Flood Hazard Analyses Seward Mapped Flood Data Area," Flood Risk Assessment and Hydrologic & Hydraulic Report, AWR Engineering: 1% annual exceedance probability, flood depths, embankment failure, and aggradation. (2021).

C. *Basis for Establishing Flood Protection Elevation.* The Flood Protection Elevation (FPE) shall be the elevation to which structures and utilities must be raised as required in the building standards in KPB .21.06.050.

1. Base Flood Elevation (BFE). In Special Flood Hazards Areas of the Kenai Peninsula Borough, the Flood Protection Elevation shall be the Base Flood Elevation delineated on the 100-year flood profiles in the Flood Insurance Study.

2. Base Flood Depth (BFD)

- a. In any AH or AO zone, the Flood Protection Elevation shall be the depth delineated on the FIRM or DFIRM (at least two (2) feet if no number is specified).
- b. In areas of the SMFDA where a Base Flood Depth has been calculated, the Flood Protection Elevation shall be the Base Flood Depth, which will be measured from the highest adjacent grade.

3. No Elevation Data

- a. In the SMFDA where no Base Flood Elevation or Base Flood Depth is available, the Flood Protection Elevation shall be at minimum two (2) feet above the highest adjacent grade. When data is available, the Flood Protection Elevation shall be determined locally by the criteria set out in KPB 21.06.040(C)(3) and KPB 21.06.050(A)(5).
- b. In any unnumbered A zone where the Flood Protection Elevation has not been determined, it shall be determined locally when data is available, and by the criteria set out in KPB 21.06.040(C)(3) and KPB 21.06.050(A)(5). A minimum of two (2) feet above highest adjacent grade may result in a lower insurance premium.

[C]D. *Warning and Disclaimer of Liability.* The degree of flood protection required by this chapter is considered reasonable for regulatory purposes and is based on scientific and engineering considerations. Larger floods can and will occur on rare occasions. Flood heights may be increased by manmade or natural causes. This chapter does not imply that land outside the areas of special flood hazards or uses permitted within such areas will be free from flooding or flood damages. This chapter shall not create liability on the part of the Kenai Peninsula Borough, any officer or employee thereof, or the Federal Insurance Administration, for any flood damages that result from reliance on this chapter or any administrative decision lawfully made thereunder.

[D]E. *Noncompliance—Enforcement.* Structures and activities which are not permitted or allowed by this chapter are prohibited. No structure or land shall hereafter be constructed, located, extended, converted, or altered without full compliance with the terms of this chapter and other applicable regulations. Violation of the provisions of this chapter by failure to comply

with any of its requirements shall be enforced by the remedies set forth in KPB 21.50. Each day a violation continues is a separate violation.

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**SECTION 2.** That KPB 21.06.045. - KPB GIS mapped flood data area, is hereby repealed. :

**SECTION 3.** That KPB 21.06.050 is hereby amended as follows:

**21.06.050. Standards.**

- A. *General Standards.* In all flood hazard areas, the following standards are required:
1. *Anchoring.*
    - a. All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure.
    - b. All manufactured homes must be anchored to prevent flotation, collapse or lateral movement, and shall be installed using methods and practices that minimize flood damage. Anchoring methods may include, but are not limited to, use of over-the-top or frame ties to ground anchors.
  2. *Construction Materials and Methods.*
    - a. All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damage.
    - b. All new construction and substantial improvements shall be constructed using methods and practices that minimize flood damage.
    - c. Electrical, heating, ventilation, plumbing and air-conditioning equipment and other service facilities shall be designed and/or otherwise elevated or located so as to prevent water from entering or accumulating within the components during conditions of flooding.
  3. *Utilities.*

- a. All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of floodwaters into the system;
  - b. New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of floodwaters into the systems and discharge from the systems into floodwaters; and,
  - c. On-site waste disposal systems shall be located to avoid impairment to them or contamination from them during flooding.
4. *Subdivision Proposals.*
- a. All subdivision proposals shall be consistent with the need to minimize flood damage.
  - b. All proposed improvements such as water, sewer, natural gas, telephone and electrical facilities shall be located and constructed in a manner which will minimize damage in the event of a flood.
  - c. All subdivision proposals shall have adequate drainage provided to reduce exposure to flood damage.
  - d. Where base flood elevation data has not been provided or is not available from another authoritative source, it shall be generated for subdivision proposals which contain 50 lots or 5 acres, whichever is less. The floodplain requirements for subdivision plats, detailed in KPB 20.30.280, apply to all subdivision proposals.
  - e. It is the responsibility of the subdivider to provide all necessary information regarding flood protection measures at the time the preliminary plat is presented for consideration by the planning commission.
5. *Review of Development Permits.* Where elevation data is not available, applications for development permits shall be reviewed to assure that proposed construction will be reasonably safe from flooding and will minimize adverse impacts to neighboring properties. The test of reasonableness is a local judgment and includes use of historical data, high water marks, photographs of past flooding, etc., where available.

B. *Specific Standards.* In all flood hazard areas, [WHERE BASE FLOOD ELEVATION DATA HAS BEEN PROVIDED] as set forth in KPB 21.06.030(B), the following provisions are required:

1. *Residential Construction.*

- a. New construction and substantial improvement of any residential structure shall have the lowest floor, including basement, elevated to or above the [BASE FLOOD ELEVATION] Flood Protection Elevation.
- b. Fully enclosed areas below the lowest floor that are subject to flooding are prohibited, or shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of floodwaters. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or must meet or exceed the following minimum criteria:
  - i. A minimum of two openings located on separate walls and having a total net area of not less than 1 square inch for every square foot of enclosed space subject to flooding shall be provided.
  - ii. The bottom of all openings shall be no higher than 1 foot above grade.
  - iii. Openings may be equipped with screens, louvers, or other coverings or devices provided that they permit the automatic entry and exit of floodwaters.
  - iv. Enclosed areas below the [BASE FLOOD ELEVATION] Flood Protection Elevation must be unfinished and usable only for parking, access or storage of materials easily moved during a flood event.
  - v. Before a final floodplain development permit is issued by the planning department for a residential structure with enclosed areas below the base flood elevation, the owners shall sign a non-conversion agreement stating that the enclosed space shall remain in compliance with KPB 21.06.050(B)(1)(b)(iv). The non-conversion agreement shall be recorded by the Kenai Peninsula Borough placing future buyers of properties on

notice of the hazards of enclosed spaces below the [BASE FLOOD ELEVATION]Flood Protection Elevation and the requirements to keep the permitted structure compliant with KPB floodplain regulations.

- c. For zones AH<sub>2</sub> [AND]AO, and areas of the SMFDA, drainage paths are required around structures on slopes to drain floodwaters away from proposed structures.
- d. A garage attached to a residential structure, constructed with the garage floor slab below the Flood Protection Elevation, must be designed to allow for the automatic entry and exit of flood waters. See KPB 21.06.050(B)(1)(b).

2. *Nonresidential Construction.* New construction and substantial improvement of any commercial, industrial or other nonresidential structure shall either have the lowest floor, including basement, elevated to the level of the [BASE FLOOD ELEVATION]Flood Protection Elevation; or, together with attendant utility and sanitary facilities, shall:

- a. Be floodproofed so that below the base flood level the structure is watertight with walls substantially impermeable to the passage of water;
- b. Have structural components capable of resisting hydrostatic and hydrodynamic loads and effects of buoyancy;
- c. Be certified by a registered professional engineer or architect that the standards of this subsection are satisfied. Such certifications shall be provided to the official as set forth in KPB 21.06.040(C)(4)(b).
- d. Nonresidential structures that are elevated, not floodproofed, must meet the same standard for space below the lowest floor as described in KPB 21.06.050(B)(1)(b).
  - e. Applicants floodproofing nonresidential buildings shall be notified that flood insurance premiums will be based on rates that are 1 foot below the floodproofed level (e.g. a building constructed to the base flood level will be rated as 1 foot below that level).
- f. For zones AH<sub>2</sub> [AND]AO, and areas of the SMFDA, drainage paths are required around structures on slopes to drain floodwaters away from proposed structures.



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- D. Coastal High Hazard Areas. Where FEMA has identified coastal high hazard areas (Zones V, VE, and V1-V30) on the FIRM or DFIRM, construction shall meet the following requirements in addition to all other provisions in this chapter:
1. All new construction shall be located landward of the reach of mean high tide and shall be anchored to prevent unintended lateral movement, floatation or collapse.
  2. All new construction, manufactured homes, and substantial improvements within coastal high hazard areas shall be elevated on adequately anchored pilings or columns such that:
    - a. The bottom of the lowest horizontal structural member of the lowest floor (excluding the pilings or columns) is elevated to or above the [BASE FLOOD LEVEL]Flood Protection Elevation; and
    - b. The pile or column foundation and structure attached thereto is anchored to resist flotation, collapse and lateral movement due to the effects of wind and water loads acting simultaneously on all building components. Wind and water loading values shall each have a 1 percent chance of being equaled or exceeded in any given year (100-year or 1-percent annual [EXCEEDENCE]exceedance probability mean recurrence interval); and
    - c. A registered professional engineer or architect shall develop or review the structural design, specifications and plans for the construction and shall provide a certification that the design and methods of construction to be used are in accordance with accepted standards of practice for meeting the provisions of subdivisions (2)(a) and (2)(b) of this subsection. The certification and related records will be maintained in the planning department permit files in perpetuity.
  3. All new construction and substantial improvements shall have the space below the lowest floor free of obstructions or constructed with breakaway walls. Such enclosed space shall not be used for human habitation and must be in compliance with the residential construction standards in KPB 21.06.050(B)(1)(b)(iv) and (v). For the purpose of this section, a breakaway wall shall have a design

safe loading resistance of not less than 10 and no more than 20 pounds per square foot. Use of breakaway walls which exceed a design safe loading resistance of 20 pounds per square foot (either by design or when so required by local or State codes) may be permitted only if a registered professional engineer or architect certifies that the designs proposed meet the following conditions:

- a. Breakaway wall collapse shall result from a water load less than that which would occur during the base flood; and
  - b. The elevated portion of the building and supporting foundation system shall not be subject to collapse, displacement, or other structural damage due to the effects of wind and water loads acting simultaneously on all building components (structural and nonstructural). Maximum wind and water loading values to be used in this determination shall each have a 1 percent chance of being equaled or exceeded in any given year (100-year or 1-percent annual [EXCEEDENCE]exceedance probability mean recurrence interval).
4. The use of fill for structural support of buildings within coastal high hazard areas on the FIRM or DFIRM is prohibited.
  5. **Manufactured Homes.** All manufactured homes to be placed or substantially improved within coastal high hazard areas shall meet the requirements for new and substantial improvement construction.

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**SECTION 4.** That KPB 21.06.060 is hereby amended as follows:

21.06.060. Exceptions procedure.

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B. *Conditions for Exceptions.*

1. Generally, the only condition under which an exception from the elevation standard may be issued is for new construction and substantial improvements to be erected on a lot of ½ acre or less in size contiguous to and surrounded by lots with existing structures constructed below the base flood level, providing subparagraphs (a) through (k) of subsection (A)(4) of this section have been fully considered. As the lot size increases the technical justification required for issuing the exception increases.

2. Exceptions may be issued for the reconstruction, rehabilitation, or restoration of structures listed on the National Register of Historic Places or the State Inventory of Historic Places, without regard to the procedures set forth in this section.
3. Exceptions shall not be issued within a designated floodway if any increase in flood levels during the base flood discharge would result.
4. Exceptions shall only be issued upon a determination that the exception is the minimum necessary, considering the flood hazard, to afford relief.
5. Exceptions shall only be issued upon:
  - a. A showing of good and sufficient cause;
  - b. A determination that failure to grant the exception would result in exceptional hardship to the applicant;
  - c. A determination that the granting of an exception will not result in increased flood heights, additional threats to public safety, extraordinary public expense, create nuisances, cause fraud on or victimization of the public or conflict with existing local laws or ordinances.
6. Exceptions, or variances as interpreted in the National Flood Insurance Program are based on the general zoning law principle that they pertain to a physical piece of property; they are not personal in nature and do not pertain to the structure, its inhabitants, or to economic or financial circumstances. They primarily address small lots in densely populated residential neighborhoods. As such, exceptions from the flood elevations should be quite rare.
7. Exceptions may be issued for nonresidential buildings in very limited circumstances to allow a lesser degree of floodproofing than watertight or dry-flood proofing where it can be determined that such action will have low damage potential, complies with all other exception criteria except subsection (B)(1) of this section, and otherwise complies with KPB 21.06.060(A) and (B).
8. Any applicant to whom an exception is granted shall be given written notice that the structure will be permitted to be built with a lowest floor elevation below the base flood elevation and that the cost of flood insurance will be commensurate with the increased risk resulting from the reduced lowest floor elevation.

**SECTION 5.** That KPB 21.06.070 is hereby amended as follows:

**21.06.070. Definitions.**

For the purposes of this chapter, the following words and phrases shall be defined as follows:

"100-year or 1-percent annual [EXCEEDENCE]exceedance probability flood" (also called "regulatory flood," "base flood", "base flood depth", or "special flood hazard area") means a flood with a 1 percent chance of being equaled or exceeded in any year. Statistical analysis of available streamflow or storm records, or analysis of rainfall and runoff characteristics of the watershed, or topography and storm characteristics are used to determine the extent and depth of the 100-year or 1-percent annual [EXCEEDENCE]exceedance probability flood.

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"Flood hazard area" means the land area covered by the flood, having a 1 percent chance of occurring in any given year. See also "100-year or 1-percent annual [EXCEEDENCE]exceedance probability flood."

"Flood Insurance Rate Map (FIRM) and Digital Flood Insurance Rate Map (DFIRM)" means the map of the community issued by the FEMA which delineates the area subject to the 100-year or 1-percent annual [EXCEEDENCE]exceedance probability flood, the water surface elevation of the base flood and the flood insurance rate zones.

"Flood Protection Elevation (FPE)" is the elevation to which new and substantially improved structures within the flood hazard areas defined in KPB 21.06.030(B) must be elevated to be protected from flood damage.

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["MINIMUM FLOOD CORRIDOR" MEANS THE ACTIVE PHYSICAL BANK FULL CHANNEL OF THE STREAM, RIVER OR CREEK AS MEASURED AT THE SEASONAL HIGH WATER FLOWS.]

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**SECTION 6.** That this ordinance shall become effective immediately upon enactment.

**ENACTED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH THIS 18TH DAY OF MAY, 2021.**

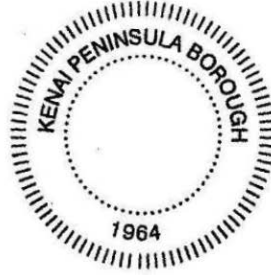


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Brent Hibbert, Assembly President

ATTEST:



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Jonni Blankenship, MMC, Borough Clerk



Yes: Bjorkman, Carpenter, Chesley, Cox, Derkevorkian, Dunne, Elam, Johnson, Hibbert  
No: None  
Absent: None