

Introduced by: Long, Mayor at the Request of the
Flood Plain Task Force
Date: 05/19/09
Hearing: 06/16/09
Action: Enacted as Amended
Vote: 9 Yes, 0 No, 0 Absent

**KENAI PENINSULA BOROUGH
ORDINANCE 2009-29**

**AN ORDINANCE AMENDING KPB 14.06.100 AND KPB 14.06.170 TO REQUIRE AN
ENGINEERING ANALYSIS AND DESIGN FOR ROAD CONSTRUCTION IN THE
SEWARD MAPPED FLOOD DATA AREA AND FLOOD INSURANCE RATE MAP
AREA WITHIN THE SEWARD-BEAR CREEK FLOOD SERVICE AREA**

- WHEREAS**, there have been numerous road failures in the road service area in the Seward vicinity; and
- WHEREAS**, Ordinance 2009-09 (Substitute) adopted the Seward Mapped Flood Data Area designating the areas subject to the 1985, 1995, and 2006 floods as flood hazard areas; and
- WHEREAS**, Section 2.11.1 of Chapter 2, Floods, of the All Hazard Mitigation Plan is to reduce susceptibility to damage and disruption by avoiding hazardous, uneconomic, and unwise development in known hazard areas; and
- WHEREAS**, Strategy 5 in Chapter 2, Floods, of the All Hazard Mitigation Plan includes a recommendation to amend KPB Chapter 14.06 to include drainage plans for roads; and
- WHEREAS**, requiring engineer designs for roads within flood hazard areas will reduce road failure; and
- WHEREAS**, road failures are expensive to repair, inconvenience the public and emergency services, and threaten life, health, safety, and property; and
- WHEREAS**, at its meeting of April 29, 2009, the Flood Plain Task Force recommended enactment; and
- WHEREAS**, at its meeting of May 12, 2009, the Kenai Peninsula Borough Road Service Area recommended enactment by unanimous consent; and
- WHEREAS**, at its meeting of May 26, 2009, the Kenai Peninsula Borough Planning Commission recommended enactment by unanimous consent; and
- WHEREAS**, at its meeting of June 1, 2009, the Seward-Bear Creek Flood Service Area Board recommended enactment of this ordinance;

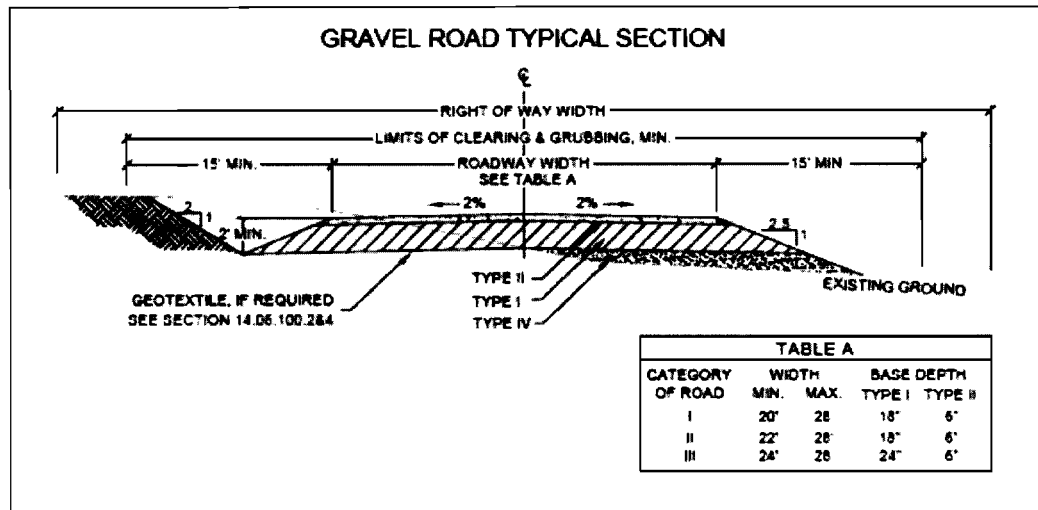
NOW, THEREFORE, BE IT ORDAINED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH:

SECTION 1. That KPB 14.06.100 is hereby amended as follows:

14.06.100. Road construction standards—Construction standards for maintenance certification.

- A. Typical section. Gravel roads shall be constructed in accordance with the Gravel Road Typical Section drawing and associated tables. Additional requirements are:
1. Roads must be contiguous with an existing road system maintained by the borough or other governmental agency. All roads must be on a dedicated right-of-way or a section-line easement and must be built along the right-of-way centerline. Minimum right-of-way width shall be 60 feet.
 2. All organic material shall be stripped and removed to a minimum depth of four feet below finished grade. If geotextile is utilized over organics, then the depth of embankment must be two feet minimum or greater as required for stability for Category I and II roads, and 30 inches or greater for Category III roads.
 3. Extraction of material between the ditch lines for any purpose other than excavation to subgrade is prohibited.
 4. Geotextile shall be placed over all subgrade soils consisting of silts or clays with a frost classification of F4 (U.S. Corps of Engineers). Geotextile shall be provided to cover maximum width of embankment.
 5. The roadway embankment shall be placed in lifts of 12 inches or less and compacted to not less than 92 percent of maximum density. Maximum density shall be determined by AASHTO T 180, Method D.
 6. In place usable excavation material within the outside 12 feet of 60-foot or greater rights-of-way meeting the specifications of the required embankment material may be utilized in lieu of borrow. Backfill must be placed in lifts and equipment tracked. No organic debris may be buried within the right-of-way.
 7. The RSA requires a 2.5:1 fore slope in ditchlines. Fill areas over six feet must be an engineered design, preapproved by the RSA director.

8. Roads constructed in level terrain susceptible to ponding require the applicant to submit to the RSA director for approval drainage designs which may include approved drainage galleries or elevated road sections.
- B. Roads must pass a proof roll test at the RSA director's discretion if expected or intended traffic volume or use of the road has not materialized prior to release of the applicant's security as provided in KPB 14.06.140. The RSA director or his staff shall make written findings stating the reason(s) a proof roll test is required. The applicant must provide the means to conduct a proof roll test during the final inspection. The proof roll test will consist of a 12-cubic-yard end dump truck loaded to maximum legal capacity traversing the road as directed by the RSA director or designee. The minimum proof rolling is full length of the road, on both lanes. If excessive rutting, greater than three-inch-depth tracks, occurs, remedial work will be required. The RSA director or designee will designate the defective areas in a written report.
- C. Roads constructed across wetlands, including peatlands, must be designed and certified by a licensed civil engineer preapproved by the RSA director.
- D. In order to limit damage to the right-of-way, adjacent properties, watercourses, and waterbodies, construction of roads within the Seward Mapped Flood Data Area (SMFDA) and Flood Insurance Rate Map (FIRM) area WITHIN THE Seward-Bear Creek Flood Service Area, as both are defined by KPB 21.06, requires an engineering analysis and design certified by a licensed civil engineer approved by the road service area board prior to start of construction. Any exception to this requirement must be approved by the road service area board in accordance with KPB 14.06.230.



Requirements for Embankment Material

Percent Passing by Weight

Category I, II, & III Roads Table

Sieve Designation	Type I	Type II	Type III*
4 inch	95--100	--	--
2 inch	85--100	100	100
1 inch	--	--	95--100
No. 4	30--60	30--65	40--75
No. 16	--	--	20--43
No. 200	0--6	6--10	4--10

*Type III relates to Category IV Gravel Roads: Typical Section

SECTION 2. That KPB 14.06.170 is hereby amended as follows:

14.06.170. Road construction standards—Drainage and culvert material.

Roads shall be constructed to prevent ponding of runoff waters in roadside ditches. Drainage ditches shall be constructed such that runoff waters will be conveyed to natural drainage courses, ditches or waterways, or other man-made drainage courses. Outfalls shall be constructed to prevent excessive siltation of riparian habitats, channel erosion, or other damage to public or private property. The RSA board may require[, UPON STAFF RECOMMENDATION,] an engineering analysis and design for locations susceptible to flooding, siltation, or other natural conditions potentially damaging to the right-of-way, adjacent property, or water courses and water bodies. Pursuant to KPB 14.06.100, the board shall require this engineering analysis and

design in the SMFDA and FIRM area. A roadway cross culvert shall be a minimum diameter of 18 inches, and with at least a one percent drainage grade through the culvert, and driveway culverts shall be a minimum of 15 inches and 30 feet in length. Culverts, coupling bands and special sections shall be corrugated steel pipe of at least 16 gauge. Plastic culverts are acceptable for driveway culverts only, if they meet AASHTO Standard Section 706-2.07 corrugated polyethylene pipe, AASHTO M 294, Type S. AASHTO cross culvert markers must be installed.

SECTION 3. That this ordinance takes effect immediately upon its enactment.

ENACTED BY THE ASSEMBLY OF THE KENAI PENINSULA BOROUGH THIS 16TH DAY OF JUNE, 2009.



Milli Martin, Assembly President

ATTEST:



Johni Blankenship, Borough Clerk



Yes: Fischer, Knopp, Long, Pierce, Smalley, Smith, Sprague, Superman, Martin
No: None
Absent: None