GALLATIN COUNTY

MEMO

TO: **Interested Parties**

FROM: **Sean O'Callaghan, CFM, Senior Planner / Floodplain Administrator**

RE: **Floodplain Amendments to Subdivision Regulations**

DATE: **June 15, 2010**

On June 15, 2010, the County Commission passed Resolution #2010-070, adopting amendments to sections 6.A and 10 of the Gallatin County Subdivision Regulations. These amendments involve the floodplain-related requirements of the Subdivision Regulations, and are summarized below:

A. Section 10.F of the Regulations is revised to establish a new process for Subdividers to request waivers from the requirement to perform a flood study/flood hazard evaluation.

B. Floodplain-related design standards previously in Section 10.G of the Regulations were revised and moved to Section 6.A.7 of the Regulations. The standards were re-written to focus on avoidance of development activities in the floodplain, and where unavoidable, mitigation of adverse affects.

C. With input from the development/engineering community, revisions were made to the physical thresholds (drainage area, horizontal & vertical separations) described in Section 10.C.2 of the Regulations that set forth the requirements for when a flood study / flood hazard evaluation must be completed.

D. Numerous minor changes were made to sections 6.A and 10 to standardize language, clarify processes, and clarify the intent of the Regulations.

The approved amendments are attached to this memo, with deletions to the text shown as ~~strikeout~~, and additions to the text shown as <u>underline</u>. Upon completion of the pending fire-amendments, a new version of the Subdivision Regulations will be published. Please feel free to contact me with any questions.

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- shall consider the site-specific conditions and any information entered into the record regarding the water conveyance facility;
- may impose conditions of preliminary plat approval as necessary to adequately mitigate adverse impacts on the subject water conveyance facility; and
- may require the width of the water conveyance facility non-interference setback to be greater than or less than the default width if site-specific conditions so warrant.

d. Any mitigation of water conveyance facilities required as a condition of preliminary plat approval shall be agreed to in writing by the subdivider prior to issuance of final plat approval. Such written agreement shall be filed with the Clerk and Recorder when the final plat is recorded and shall include language to assure the mitigation requirements are binding upon all successors in interest and remain in effect until such time that the water conveyance facility is abandoned in accordance with the requirements of Montana Law or alternative requirements are agreed to in writing by all applicable parties.

e. Water conveyance facility non-interference setbacks do not eliminate any secondary easement for maintenance and repair of the water conveyance facility as described by Section 70-17-112, MCA. Subdividers shall consider the specific terms and requirements of any such secondary easement(s) when designing a subdivision to ensure a buildable location on each developable lot.

f. Before any maintenance, improvements, or modifications are performed on any water conveyance facility, written permission must be obtained from the water users and/or water conveyance facility's authorized representatives.

7. Subdivision of Land within the 100-year Floodplain. Where the 100-year Floodplain has been delineated according to the requirements set forth in Section 10 of these Regulations, the following standards shall apply to any proposed Subdivision:

a. Land located within the 100-year Floodplain may be used for the following purposes:

i. Agriculture
ii. Open Space.
iii. Wildlife Habitat.
iv. Parkland.

v. Recreation.

b. Any proposed Lot that includes land within the 100-year Floodplain must contain a designated building site outside of the 100-year Floodplain, within which all new development activity (erection or placement of structures, placement of fill, topographic reconfiguration, etc.) on that Lot shall take place.

i. All structures built on such lots shall be designed and constructed so the lowest-floor elevation within the structure is at least two feet above the 100-year flood elevation.

ii. The required lowest-floor elevation for each building site shall be recorded on the plat or other applicable development document (final site plan, Covenants, etc.).

c. Subdivider shall demonstrate that safe access to the designated building site must be possible during the 100-year Flood.

d. Subdivisions should be designed to avoid placing Subdivision-related infrastructure (roads, bridges, utilities, etc.) within the boundaries of the 100-year Floodplain. Infrastructure that must be located in the 100-year Floodplain shall not adversely affect public health and safety or increase Flood hazards.

i. Bridges constructed inside a Subdivision shall be designed so the lowest horizontal chord of the bridge is at least two-feet above the Base Flood elevation.

B. Lots. See FIGURE 1.

1. Dimensions and Orientation: Lot size, width, shape, and orientation shall be appropriate for the location and contemplated use of the subdivision. Lot designs with irregular shapes, narrow necks, points and flag shapes shall be permitted only when the subdivider can demonstrate that the proposed lot designs are necessary due to topography or other physical constraints. Each lot shall contain a satisfactory building site and shall conform to zoning codes and comprehensive plans where officially adopted, and to the regulations of MDEQ. Slopes in excess of 25 percent (25%) shall be presumed unsuitable for building sites unless otherwise proved by the subdivider.

2. Division by Rights-of-Way: No single lot shall be divided by a dedicated right-of-way or easement, which would reduce the buildable area to a size less than required by these and other adopted regulations.

SECTION 10: FLOOD HAZARD EVALUATION

A. General. Land subject to being flooded by a Flood of 100-Year Frequency as defined by Title 76, Chapter 5, MCA, or land ~~deemed to be~~ subject to flooding ~~by the Commission~~ pursuant to these Regulations, shall not be subdivided for building or residential purposes, or other uses that may increase or aggravate Flood hazards to life, health or welfare, or that may be prohibited by state or local Floodplain or Floodway regulations. Land ~~deemed to be~~ subject to flooding pursuant to these Regulations~~by the Commission~~ may include (but is not limited to) land subject to 100-year flooding, 500-year flooding, shallow flooding, groundwater rise, historically flooded lands, and lands located in proximity to a Watercourse.

B. Intent. The intent of a flood hazard evaluation is to assess ~~all~~ possible flooding hazards to a proposed Subdivision and resulting therefrom. Part of this evaluation must therefore addresse the uncertainty of predicted conditions during significant meteorlogic, geologic and hydrologic events, and the evaluation draws upon known and observed Flood behaviors and dynamics for context. The ~~regulatory~~ flood maps and associated documentation included within the County-recognized flood studies ~~recognized by Gallatin County~~ may contain some of this information but do not address the full range of hazards and flooding conditions necessary for a flood hazard evaluation.

C. Procedure.

1. Flood Hazard Evaluation Required: If any portion of a proposed Subdivision is within a flood zone as designated by a FEMA Flood Insurance Rate Map, a FEMA Floodway Map, or a County-~~approved~~ recognized flood study, a flood hazard evaluation (as outlined in Subsection D below)shall be submitted. County-recognized flood studies include flood studies adopted by Federal or State government agencies (USGS, NRCS, Army Corps of Engineers, FEMA, Montana DNRC), those flood studies referenced by the Gallatin County Floodplain Regulations, or other flood studies meeting the requirements of Appendix G of these Regulations that have been reviewed and found to be acceptable by the Gallatin County Floodplain Administrator. Where multiple flood studies cover a proposed Subdivision, the Subdivider shall consult the Floodplain Administrator to identify the applicable flood study to reference.

2. Flood Study Required: If any ~~portion of~~ infrastructure (roads, bridges, utilities, etc.) or developable portion of a lot within a proposed Subdivision is within two thousand (2,000) horizontal feet and less than twenty (20) vertical feet above the Ordinary High Water Mark of a Watercourse draining an area of ~~five (5~~20~~)~~ square miles or more, or within 1,000 horizontal feet and less than 10 vertical feet above the Ordinary High Water Mark of a Watercourse draining an area between 10 and 20 square miles, and no

~~official floodplain or floodway delineation (study) of the stream have been made~~County-recognized flood study of the Watercourse exists;~~,~~ or when a Base Flood elevation is contested or not provided by a County-recognized flood study;~~,~~ a flood study (as outlined in Appendix G) consisting of a full engineering analysis to determine the Base Flood elevation and a flood hazard evaluation (outlined in Subsection D below) shall be required. A ~~licensed professional~~ Engineer experienced in this field of work must submit a stamped letter attesting to the accuracy and integrity of the flood study.

3. Submission of Report: Three copies of the required flood hazard evaluation and/or flood study and the ~~model's~~ digital files from any applicable hydraulic model shall be included with the Preliminary Plat application submitted to the Planning Department. It is recommended that this information be provided to the Floodplain Administrator ~~at the time of~~for review and comment at least 30-days prior to submittal of the Preliminary Plat application to the Planning Department. This information may be forwarded by the Floodplain Administrator or County Commission ~~submitted, upon the request of the Commission,~~ to the Floodplain Management Section, Water Resources Division, Department of Natural Resources and Conservation (DNRC) for review and concurrence. ~~If submitting a Flood Hazard Evaluation or flood study, the applicant will be required to pay for independent peer review by a licensed professional engineer or other qualified professional as approved by the County. Applicant may be required to pay for independent peer review of the flood hazard evaluationif the County deems this necessary for reasons of technical complexity or if the applicant disputes County's findings.~~ The Subdivider may choose to pay for independent peer review of a flood study and/or flood hazard evaluation where the Subdivider disputes findings reached by the County or DNRC. The Subdivider may request a reimbursement for peer review expenses from the County if the peer review validates the conclusions reached in the Subdivider's flood study and/or flood hazard evaluation. The County Commission or County Floodplain Administrator may request the Subdivider pay for independent peer review of a flood study and/or flood hazard evaluation when those items are beyond the technical capabilities of the Floodplain Administrator. The flood study/flood hazard evaluation review fees and independent peer review fees shall be assessed at the current rate established in the Gallatin County ~~floodplain~~ Planning Department fee schedule.

D. Flood Hazard Evaluation. A flood hazard evaluation is a professional assessment of ~~all~~ possible flooding hazards and a report of the risks associated with this potential flooding in the proposed Subdivision or resulting therefrom. In addition to industry standard, one-dimensional, steady state water surface elevation modeling provided by the applicable County-recognized flood study (as outlined in Section 10.C.1), a flood hazard evaluation includes:

1. A hydrologic analysis detailing: the derivation of the magnitude and frequency of the design flows utilized in the risk analysis (a discussion of the statistical and ~~applicant's~~ the Engineer's confidence in these estimates); the implications of simultaneous Flood events on the design discharge, and verification that these estimates reflect the most recent recorded stream gage data and/or industry standard estimation methodologies.

2. An analysis and commentary regarding the accuracy of the existing regulatory maps to predict 100-year and 500-year Floodplain boundaries with existing conditions upstream, on site and downstream of the ~~project~~ Subdivision area or a new flood study proposed as the new regulatory map for the ~~project~~ Subdivision area.

3. A discussion of overbank flow path uncertainty related to: ~~rivers and stream~~ Watercourse channels that are topographically higher than surrounding Floodplain, such as is common on the East and West Gallatin Rivers; shallow ~~flooding~~ Flood channels; alluvial fan flooding; debris jams; ice jams and/or diversions and ditches.

4. A discussion of possible or predicted channel stability during Flood events, including the possibility of channel avulsion and/or thalweg migration that could affect the ~~flooding~~ Flood dynamics in the ~~project~~Subdivision area.

5. A discussion of the risk of landslides and/or debris flows occurring and affecting Flood behavior in ~~project~~Subdivision area drainages.

6. An analysis of the stability and structural integrity of permitted and unpermitted Floodplain fill in the vicinity of the ~~project~~ Subdivision that contacts the regulatory 100-year Floodplain, including rip rap, berms, levees, and other fill.

7. Identification and quantification of predicted overland flow and potential overland flow paths above and below the ~~property under consideration~~land proposed for Subdivision.

8. A discussion of the ~~project~~ proposed Subdivision area's propensity to experience Flood due to groundwater rise ~~flooding~~.

9. Identification and quantification of predicted flooding from runoff over saturated and/or frozen ground.

10. A complete discussion of the stormwater runoff management practices and design criteria utilized to safely pass stormwater through the ~~project~~Subdivision without negatively affecting up- and downstream Flood dynamics. This ~~may include an analysis of~~discussion shall be based on runoff after projected Subdivision buildout ~~scenarios~~conditions.

11. A discussion of risks associated with failures in upstream, downstream or on-site road, culvert, bridge and stormwater management infrastructure.

12. A statement attesting that all proposed sanitary sewer infrastructure meets 100-year Flood design standards and/or will not otherwise contribute to water pollution during periods of flooding or high groundwater.

13. A discussion of ~~irrigation ditches~~Water Conveyance Facilities in the area and how they would affect the ~~project~~Subdivision should they fail, overtop or route surface runoff.

14. An identification of depressional areas (areas below the Base Flood elevation or design Flood elevation but unconnected to a separate and discrete flow path).

15. A discussion of risks associated with dam failures.

16. A discussion of potential changes in runoff or watershed hydrology that could affect the ~~project~~proposed Subdivision.

17. A discussion of impacts to the Floodplain associated with development of the Subdivision (i.e. boring utilities under Watercourse channel, construction of Watercourse crossings, etc.) and proposed mitigation of such impacts.

18. A discussion regarding compliance with the requirements of Section 6.A.7.

~~17~~19. ~~A discussion of any Flood hazard that the Floodplain Administrator or County Commission feels is germane to the project~~Subdivision.

E. Flood Hazard Evaluation Techniques. Acceptable methodologies for developing a flood hazard evaluation include industry standard methods and those capable of satisfying professional peer review. These may include engineering, hydraulic, hydrologic, fluvial geomorphic, geotechnical, and risk analyses in addition to professionally qualified opinions and observations.

F. Waiver of Requirement. A Subdivider may apply for a waiver from the requirement to perform a flood study and/or flood hazard evaluation following the process described in Section 10.F.1 of these Regulations. The Commission may waive the requirement to perform a flood study and/or flood hazard evaluation after considering the criteria described in Section 10.F.2 of these Regulations. ~~The Commission may waive this requirement where the subdivider contacts the Water Resources Division, DNRC, and that agency states in writing that data indicates that the proposed subdivision is not in the flood hazard area as defined in this Section. In considering a waiver, the Commission shall consult with the Gallatin County Floodplain Administrator.~~

1. Process for Requesting Waiver:

a. Waivers shall be requested by the Subdivider in writing, submitted to the Planning Department, and processed by the Floodplain Administrator.

b. Waiver requests may be reviewed and decided upon by the Commission prior to submittal of the Preliminary Plat Application to the Planning Department, or reviewed concurrently with the Preliminary Plat Application;

c. The waiver request shall include substantial documentation sufficient to demonstrate that the proposed Subdivision is safe from flood hazards; and shall address the criteria described below in Section 10.F.2. Such documentation may include, but is not limited to, ground elevations, hydrologic information for the subject Watercourse, historical Flood information, descriptions or mapping of local drainage patterns, other similar information;

d. The Floodplain Administrator shall review the waiver request and prepare a staff report for the County Commission;

e. If the waiver request is processed prior to submittal of the Preliminary Plat Application, the County Commission shall hold a public hearing on the waiver request within 30 working days of the Floodplain Administrator's receipt of the waiver request.

f. If the waiver request is processed concurrently with the Preliminary Plat Application, the County Commission shall consider the waiver request at the same public hearing as the Preliminary Plat Application.

g. In reaching a decision on the waiver request, the County Commission shall consider the information provided by the Subdivider, staff report, public testimony, and other information relevant to the request; and

h. If the waiver request is processed prior to submittal of the Preliminary Plat Application a written record of the County Commission's decision on the waiver shall be provided to the Subdivider within 10 working days of the decision.

i. If the waiver request is processed concurrently with the Preliminary Plat Application, a written record of the County Commission's

decision on the waiver shall be provided to the Subdivider with the written findings documenting the decision on the Subdivision.

2. Criteria for Waiver: In reaching a decision on whether or not to grant a waiver, the Commission shall consider the following criteria:

   a. Whether the Subdivider provided substantial documentation, as described in Section 10.F.1(c) above, to show that the proposed Subdivision is safe from Flood hazards;

   b. Whether the Subdivider is proposing adequate mitigation to assure that Flood hazards are not significantly increased as a result of the proposed Subdivision;

   c. If the property is already developed, whether sufficient land-use controls exist to assure that any redevelopment of the property will be safe from Flood hazards

~~G. **Subdivision of Land within a 100-year Delineated Floodplain.** Where the 100-year floodplain has been delineated and mapped in a County-approved study, the following standards shall apply to all proposed subdivisions:~~

~~1. No subdivision roads, bridges, utilities, or 100 % of a lot shall be located within the boundaries of the 100-year floodplain.~~

~~2. Land located within the 100-year floodplain boundary may be used for the following purposes:~~

~~i. Open space.~~
~~ii. Wildlife habitat.~~
~~iii. Parkland.~~
~~iv. Recreation.~~

~~H~~G. **Plat Map requirements.** The Preliminary and Final Plats of all n~~N~~ew ~~developments~~ Subdivisions within any land located in a 100-year ~~flood hazard areas designated by the regulatory study (FEMA or County-approved study)~~Floodplain shall ~~field survey~~show the Base Flood elevations and ~~show~~ the limits of the 100-year Floodplain based on where the Base Flood elevations intersect surveyed ground elevations.~~on the plat map.~~ The Floodplain Administrator may require additional ~~Base~~ Flood data and Flood hazard notes ~~shall~~ to be shown on the Final Plats or other applicable development document (final site plan, Covenants, etc.). Such information includes~~ing~~, but is not limited to, the elevation of the existing ground, flood water depth, lowest permissible floor elevations, and the boundary of the ~~base flood~~100-year Floodplain and Floodway through the Subdivision.

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