



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

Eastern Idaho Field Office  
4425 Burley Dr., Suite A  
Chubbuck, Idaho 83202  
Telephone (208) 237-6975  
<http://www.fws.gov/idahoef/>



### TETON COUNTY PLANNING & ZONING

SEP 23 2010

RECEIVED

SEP 21 2010

Wendy Danielson  
Teton County  
150 Courthouse Drive  
Suite 107  
Driggs, Idaho 83422

Subject: Proposed Heritage Peaks Subdivision in Teton County, Idaho.

Dear Ms. Danielson:

The Fish and Wildlife Service (Service) is providing you with a list of endangered, threatened, proposed, and/or candidate species, and designated critical habitat which may occur in the area of the proposed Heritage Peaks Subdivision in Teton County, Idaho. You requested this list by letter on September 14, 2010 and received in our office on September 17, 2010.

The Endangered Species Act of 1973, as amended (Act) includes provisions for the conservation of listed species on both Federal and non-Federal lands. A private landowner may wish to enter into an agreement with the Service under section 10 of the Act for activities that benefit listed, proposed, and candidate species. Voluntary agreements such as Safe Harbor Agreements or Candidate Conservation Agreements contribute to the conservation of listed, proposed, or candidate species while allowing for management activities on non-Federal lands. In addition, Section 9 of the Act prohibits the "taking" of any listed species without an exemption (issued by the Service) for that take<sup>1</sup>. For private landowners, that exemption is developed through the permit process of Section 10 (through a Habitat Conservation Plan) of the Act. More information on the various mechanisms for take exemption available to private landowners under the Act can be found at <http://www.fws.gov/idaho/Landowners.htm>.

Section 7 of the Act requires Federal agencies to assure that their actions do not jeopardize any listed species and provides a process for exemption of take for federal agencies. If there is a Federal action (funding, permitting, or direct action) associated with your project, the Federal

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<sup>1</sup> Take of threatened or endangered animal species is defined as; harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the Service to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the Service as an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering.

Federal action (funding, permitting, or direct action) associated with your project, the Federal agency is required to consult with the Service if the action may affect a listed species. Section 7 regulations allow for applicants to be involved in the consultation process. For instance, a Federal agency may designate you or another non-Federal entity to represent them in an informal consultation.

The enclosed list fulfills the requirements for a species list under section 7(c) of the Act. If the project decision has not been made within 180 days of this letter, regulations require that you request an updated list. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at

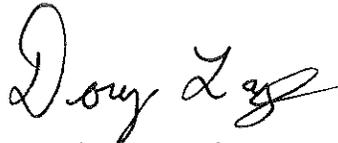
<http://www.fws.gov/endangered/consultations/s7hndbk/s7hndbk.htm>. Section 7 consultation information specific to Idaho listed species can also be found on the Snake River Fish and Wildlife Office website at <http://www.fws.gov/idaho/species.htm>.

For more information on grizzly bears, and living and recreating in grizzly bear country, please visit the Service's Mountain-Prairie Region Grizzly Bear Recovery Home Page at:

[http://mountain-prairie.fws.gov/species/mammals/grizzly/fact\\_sheets.htm](http://mountain-prairie.fws.gov/species/mammals/grizzly/fact_sheets.htm) .

If you have any questions about your responsibilities under section 7 of the Act, or require further information, please contact Ty Matthews of our Eastern Idaho Field Office at (208)237-6975 extension 115. Thank you for your interest in endangered species conservation.

Sincerely,

A handwritten signature in black ink, appearing to read "Doy L. Ziegler". The signature is written in a cursive, flowing style.

Acting Supervisor,  
Eastern Idaho Field Office

Enclosures



TETON COUNTY, IDAHO PLANNING & BUILDING DEPARTMENT  
TETON COUNTY, IDAHO  
SPECIES LIST 2010

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LISTED SPECIES

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Grizzly bear (*Ursus arctos*) LT

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PROPOSED SPECIES

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None

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CANDIDATE SPECIES<sup>1</sup>

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Yellow-billed cuckoo (*Coccyzus americanus*) C

- LE - Listed Endangered
- LT - Listed Threatened
- XN - Experimental/Non-essential population
- PT - Proposed Threatened
- C - Candidate

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<sup>1</sup>Candidate species have no protection under the Act, but are included for your early planning consideration. Candidate species could be proposed or listed during the project planning period, and would then be covered under Section 7 of the Act. The Service advises an evaluation of potential effects on candidate species that may occur in the project area.



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY



900 North Skyline Drive, Suite B • Idaho Falls, Idaho 83402 • (208) 528-2650

C.L. "Butch" Otter, Governor  
Toni Hardesty, Director

March 25, 2009

Patrick Vaile  
Teton County P&Z Administrator  
89 N. Main Street  
Driggs, ID

**Re: Heritage Peaks PUD-Teton County, Water Quality Impact Analysis (NP Evaluation).  
DEQ # 09-01-41**

Dear Mr. Vaile

Teton County has required the preparation of a Water Quality Impact Analysis (NP Evaluation) for the Heritage Peaks PUD pursuant to the Teton County Subdivision Ordinance. Teton County has requested DEQ review the NP Evaluation. This letter contains DEQ's comments and recommendations regarding the NP Evaluation. This letter does not constitute and approval, license, permit or any other form of authorization required by law. The comments and recommendations contained in this letter are provided to Teton County for its consideration in reviewing the development pursuant to Teton County law. The letter reflects DEQ's opinion, based upon the information and analysis in the NP Evaluation, regarding whether the discharges from wastewater systems for the proposed development will comply with the Idaho Ground Water Rule and Idaho Water Quality Standards. The comments and recommendations, however, are not binding and Teton County is free to disregard this letter.

The DEQ has the following comments regarding the NP Evaluation:

1. The NP Evaluation does not discuss or address the fate transport of pathogens or their effects on ground water.
2. The NP Evaluation does not discuss or address the fate transport of phosphorus to the ground water or adjacent Spring Creek. It is uncertain whether there exists a connection of ground water (either the shallow perched water (wetlands) or the upper unconfined aquifer) to the surface water of Spring Creek. Spring Creek is not a 303d listed stream and currently has no TMDL and has not been listed as water quality limited, however the USEPA Gold Book (USEPA, 1986) water quality guideline values for total phosphorous should guide the evaluation if there exists a connectivity of either the shallow perch water or the upper unconfined aquifer to Spring Creek. The US EPA water quality value for phosphorous for streams is 0.100 mg/l.

3. The location and placement of the drain fields will be critical in meeting all of the Technical Guidance Manual (TGM) criteria. The Health District should be consulted for proper location of the drian fields per the (TGM) for Subsurface Disposal Systems.
4. The individaul drain fields should also be modeled to assure compliance to any individual drinking water wells that may be located down gradient of the proposed dranfeild locations. The wells for lots 3,4 and 5 are down gradient of the drain fields for lots 4 and 5.
5. The conclusions for the NP report should be more speicific in what will actually be proposed as far as the number and size of lots and the level of treatment in order to meet the required limits at the compliance points. The plat should be updated to match the accepted or selected alternative from the NP evaluation.

If you have any questions regarding this letter or if we can be of further assistance, please call (208) 528-2650.

Sincerely,



William Teuscher PE  
Water Quality Engineer  
Idaho Falls Regional Office

C: Eric Neher PG, Regional Administrator  
Gregory Eager PE, Engineering manager  
Doug Conde, Deputy Attorney General  
Mike Dronen, EIHD Driggs.  
John Rice PG, Rocky Mountain Environmental



STATE OF IDAHO  
DEPARTMENT OF  
ENVIRONMENTAL QUALITY

900 North Skyline Drive, Suite B • Idaho Falls, Idaho 83402 • (208) 528-2650

C.L. "Butch" Otter, Governor  
Toni Hardesty, Director

July 16, 2010

Patrick Vaile  
Teton County P&Z Administrator  
89 N. Main Street  
Driggs, ID

**Re: Heritage Peaks PUD-Teton County, Water Quality Impact Analysis Addendum (NP Evaluation). DEQ # 09-01-41**

Dear Mr. Vaile

Teton County has required the preparation of a Water Quality Impact Analysis (NP Evaluation) for the Heritage Peaks PUD pursuant to the Teton County Subdivision Ordinance. Teton County has requested DEQ review the NP Evaluation. This letter contains DEQ's comments and recommendations regarding the NP Evaluation. This letter does not constitute an approval, license, permit or any other form of authorization required by law. The comments and recommendations contained in this letter are provided to Teton County for its consideration in reviewing the development pursuant to Teton County law. The letter reflects DEQ's opinion, based upon the information and analysis in the NP Evaluation, regarding whether the discharges from wastewater systems for the proposed development will comply with the Idaho Ground Water Rule and Idaho Water Quality Standards. The comments and recommendations, however, are not binding and Teton County is free to disregard this letter.

The DEQ has the following comments regarding the NP Evaluation:

1. DEQ feels that all of our previous comments have been addressed and that the Water Quality Impact Analysis is acceptable.
2. It is DEQ's opinion that there will be no significant impacts to the ground or surface waters if the recommendations are followed as presented in Section 5 of the Water Quality Impact Analysis Addendum which are summarized below:
  - a) By reducing the number of lots to 2 lots.
  - b) By the installation of advanced treatment units for the septic systems in order to meet the effluent quality of 27mg/l nitrate concentration, along with sand mound or cap and fill trenches for the drain fields. Also by meeting all set backs as established in the Technical Guidance Manual (TGM). And by assuring the established placements for the septic tanks, drain fields and wells are clearly shown on the amended preliminary plat.

If you have any questions regarding this letter or if we can be of further assistance, please call (208) 528-2650.

Sincerely,

A handwritten signature in cursive script, appearing to read "William Teuscher".

William Teuscher PE  
Water Quality Engineer  
Idaho Falls Regional Office

C: Eric Neher PG, Regional Administrator  
Gregory Eager PE, Engineering manager  
Mike Dronen, EIHD Driggs  
Jennifer Zung PE, President, Harmony Design and Engineering



**IDAHO DEPARTMENT OF FISH AND GAME**

UPPER SNAKE REGION  
4279 Commerce Circle  
Idaho Falls, Idaho 83401

C.L. "Butch" Otter / Governor  
Cal Groen / Director

October 28, 2010

J. Curt Moore  
Teton County Planning and Zoning  
150 Courthouse Drive, Room 107  
Driggs, ID 83422

RE: Heritage Peaks Subdivision

Dear Curt:

We have reviewed the Preliminary Plat proposal, Natural Resources Analysis, and Wetlands Delineation Report for the Heritage Peak Subdivision. Resident species of fish and wildlife are the property of all citizens within the state (Idaho Code § 36-103(a)), and decisions affecting fish and wildlife therefore are the concern of all Idahoans. The Idaho Department of Fish and Game (Department), acting under the supervision of the Idaho Fish and Game Commission, is charged with the statutory responsibility to preserve, protect, perpetuate, and manage all fish and wildlife in Idaho (Idaho Code § 36-103(a)). As such, we advocate that fish and wildlife receive equal consideration with other resources in decisions affecting land and water management and offer the following comments.

This general area shown on the plat map has been historically grazed as have most areas that cannot be cultivated in the Teton Valley. With its diverse vegetation and location primarily in a wetland, this area offers high value habitat for many animal classes including birds, mammals, reptiles, and fish.

Yellowstone cutthroat trout (YCT), a species of special concern, has access to Spring Creek during periods of high water and utilizes the Spring Creek drainage for possible feeding, migration, and spawning. With recent petitions to have YCT listed under the Endangered Species Act, it is imperative that this water system is protected from pollutants. This waterway could be compromised if suitable septic systems are not used. This entire system makes its way to the Teton River which is also important Yellowstone Cutthroat trout habitat.

From the plat, most of this property will remain undeveloped. The two home sites will not significantly alter wildlife habitat or movements. This project area is located adjacent to a major highway and other residences, so it accustoms local wildlife to human disturbances.

We recommend Teton County P&Z include the following requirements for this development:

1. Plat notes should include an agreement that landowners cannot file a claim against the Idaho Department of Fish and Game for wildlife damage to their property.
2. Plat notes should include language prohibiting the feeding of wildlife, especially elk and deer. It should be noted that recent legislation strictly prohibits the private feeding of big game animals in

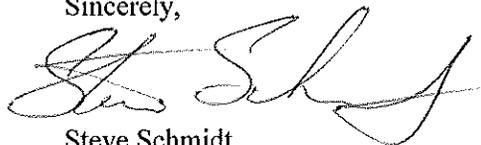
*Keeping Idaho's Wildlife Heritage*

this area (IDAPA 02.04.25.001). Song birds would not be included in this prohibition, however, bird feeders should be prohibited March through November when bears are active.

3. Plat notes should require pets (dogs and cats) be restrained or directly attended at all times.
4. Plat notes should require that all fences be constructed to allow wildlife passage. Buck-and-rail and woven wire fences should be prohibited. Barbed wire fences should not be taller than 42 inches, have smooth wire on top, and be constructed to be let down in winter.
5. Plat notes should require that hay and/or other domestic livestock feed stored on the property be tightly paneled to exclude elk and deer. Design specifications are available from IDFG.
6. Utility lines should be constructed underground. Utility poles are favored perches of numerous raptors which prey on young grouse chicks. Sharp-tailed grouse nesting is suspected to occur in the proposed development area.
7. Noxious weeds must be controlled. Yellow toadflax, musk thistle, Canada thistle, spotted knapweed, and leafy spurge are present in this area.
8. Garbage should be kept in bear proof containers and removed at least once a week.
9. If this development does not commence within five years, it must be resubmitted through the new development process again.

Thank you for providing us an opportunity to comment on this proposal for the Heritage Peaks Subdivision. Please contact Paul Faulkner of my staff at 208-525-7290 if you have questions about our comments.

Sincerely,



Steve Schmidt  
Regional Supervisor

SLS:TT:jms

cc: Natural Resources Policy Bureau, IDFG  
Terry Thomas, IDFG  
Charlie Anderson, IDFG  
Deb Mignogno, USFWS-Eastern Idaho Field Office

M. Dronen@silvestri.com

TETON COUNTY OFFICE

820 Valley Centre Drive  
Driggs, Idaho 83422  
208.354.2220 • fax 354.2224  
www.idaho.gov/phd7

Promoting the Health of People & Their Environment



28 October 2010

Teton County Planning and Zoning  
150 Courthouse Drive  
Driggs, Idaho 83422

AW Engineering  
255 South Main, PO Box 139  
Victor, Idaho 83455

TETON COUNTY  
PLANNING & ZONING

OCT 28 2010

RECEIVED

RE: Heritage Peaks Subdivision

Eastern Idaho Public Health District approves the subdivision application and preliminary plat (revised 16 Aug 10) for Heritage Peaks Subdivision. As stated in our letter of 16 Aug 10, same subject, the following comments are intended to provide additional information regarding conditions necessary to obtain an individual on-site sewage disposal permit.

1. All site suitability criteria, contained in the Technical Guidance Manual for Individual Sewage Disposal Systems, must be met. This includes required separation distances to permanent, intermittent, and temporary surface water features, and irrigation ditches and canals.
2. Sewage disposal systems must meet the conditions stated in the DEQ letter, dated 16 Jul 2010, RE: Heritage Peaks PUD-Teton County, Water Quality Impact Analysis Addendum (NP Evaluation) DEQ #09-01-41. Systems must also comply with paragraph 5 of The Level 1 Nutrient/Pathogen Evaluation Addendum for Heritage Peaks Subdivision, dated 5 Jul 2010, with the following exception: private wells must be a minimum of 100 feet from drainfields and 50 feet from septic tanks.
3. Any construction involving identified wetlands (to include transfer lines crossing wetlands) will require prior approval from the US Army Corps of Engineers.

The sanitary rules/regulations and appropriate health certificate for this development will be provided following a review of the final plat. Please give me a call if you have any additional questions.

Michael Dronen, EHS  
Eastern Idaho Public Health District



**TETON COUNTY OFFICE**

820 Valley Centre Drive  
Driggs, Idaho 83422  
208.354.2220 • fax 354.2224  
www.idaho.gov/phd7

Promoting the Health of People & Their Environment

16 August 2010

Teton County Planning and Zoning  
150 Courthouse Drive  
Driggs, Idaho 83422

AW Engineering  
255 South Main, PO Box 139  
Victor, Idaho 83455

RE: Heritage Peaks Subdivision

Eastern Idaho Public Health District approves the subdivision application and preliminary plat (revised 1 Mar 2010) for Heritage Peaks Subdivision. The following comments are intended to provide additional information regarding conditions necessary to obtain an individual on-site sewage disposal permit.

1. All site suitability criteria, contained in the Technical Guidance Manual for Individual Sewage Disposal Systems, must be met. This includes required separation distances to permanent, intermittent, and temporary surface water features, and irrigation ditches and canals.
2. Sewage disposal systems must meet the conditions stated in the DEQ letter, dated 16 Jul 2010, RE: Heritage Peaks PUD-Teton County, Water Quality Impact Analysis Addendum (NP Evaluation) DEQ #09-01-41. Systems must also comply with paragraph 5 of The Level 1 Nutrient/Pathogen Evaluation Addendum for Heritage Peaks Subdivision, dated 5 Jul 2010, with the following exception: private wells must be a minimum of 100 feet from drainfields and 50 feet from septic tanks.
3. Any construction involving identified wetlands will require prior approval from the US Army Corps of Engineers.

The sanitary rules/regulations and appropriate health certificate for this development will be provided following our review of the final plat.

Please give me a call if you have any additional questions.

A handwritten signature in black ink, appearing to read "M. Dronen", with a long horizontal line extending to the right.

Michael Dronen, EHS  
Eastern Idaho Public Health District



STUDIES - MASTERPLANS - DESIGNS - CONSTRUCTION SERVICES - REVIEWS

**WILLIAMS ENGINEERING, INC.**  
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November 11, 2010

Curt Moore, Planner  
Teton County Planning  
Sent via E-mail

Re: Response to November 5, 2010 Letter regarding Heritage Peaks Subdivision

Dear Curt:

This letter is sent in response to the aforementioned letter. You asked a number of questions or sets of questions, numbered one through six. My responses are numbered to correspond with the questions.

- 1. Does the applicant need to establish the floodplain BFE now at the subdivision stage? Now.* Besides being more cost effective to determine the BFE for both lots together rather than each separately, which cost savings is not a factor in regulation or this answer, it is important that the County in its administration of the floodplain understands the actual floodplain impacts prior to subdivision final approval, and also that all property purchasers have full understanding and disclosure regarding the effects of the floodplain in advance of lot purchase and building design. The County floodplain ordinance can be no less stringent than FEMA requirements, which are straightforward on this matter as previously submitted to you. The BFE must be established as part of the subdivision process, and not left to the building permit stage. This was discussed before with Patrick Vaile, who agreed that in the future, which at the time was after The Roost Subdivision, that going forward this would not only be the regulatory approach but also appropriately Teton County's administrative approach. It would probably be well to have that word get out to the planning, engineering, surveying, and development community. See comments at the end of this letter regarding this.
- 2. Since there are building envelopes shown outside of the Zone A, does BFE really need to be established? Can a building permit's Elevation Certificate be accepted without BFE established in a formal way here?* Yes, the BFE really needs to be established, on which the ruling is straightforward and clear. Furthermore, if the building envelopes are determined to be outside of the floodplain, an Elevation Certificate is not even required. Moreover, if the building envelopes were in the floodplain, not only would an Elevation Certificate be required and a BFE established, but the BFE would have to be established using detailed methods and not simplified methods.
- 3. Are simplified methods for determining BFE acceptable here?* When more than 5 acres are proposed for subdivision having a Zone A floodplain, FEMA guidelines allow a floodplain administrator, if felt appropriate, to permit the use of simplified methods only under two circumstances. One is if all building envelopes are shown to be outside of the floodplain and the terrain is very steep indicating that there is substantial elevation drop between the building envelope and the floodplain, which is not the case for the subdivision. The second condition is when the entire mapped floodplain is in an open space **and** use of a simplified method indicates that the floodplain within the subdivision boundaries truly would be entirely within the open space [I have reason to believe this could also include being entirely outside of building envelopes, although that is not directly stated or shown in figures]. FEMA-specified simplified methods are data extrapolation, which does not apply on this project, and contour



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interpolation, which using the present contours shown on the Preliminary Plat, would not be an acceptable solution. However, even if the contouring are refined past the site boundary so that it does not warp contours within edge of the site, it is still questionable as to whether this would even meet the criteria, let alone be an acceptable solution given the circumstances. Of particular concern to me is that contours are perpendicular to the stream rather than parallel, or there is a very flat alluvial fan condition. Also, approximately the west third of the site is sufficiently close to and upstream from the crossing with County Road 2000 West, which no doubt will result in some backwater, that the approximate zone is questionable. Although not mentioned in FEMA documentation as a simplified method, there are two other conditions which can legitimately be used as a simplified method. If the building envelopes are a safe height above either the potential overtopping as determined by weir analysis of an adjacent downstream barrier road or crossing, or by culvert or bridge headwater as determined by a detailed analysis, then the building envelopes could be considered out of the floodplain-- at least for the approximate west third of the site. However, going eastward, the elevation rises sufficiently to allow this type of determination to adequately indicate that the entire site could be out of the floodplain. Consequently, while simplified methods sometimes are allowed and are adequate and appropriate to indicate whether an area is in or out of the floodplain, I do not believe it is for this subdivision, and therefore detailed methods are required.

4. *If simplified methods are not acceptable for establishing BFE here, then what detailed methods would be acceptable and what would the minimum detailed methods be?* Surprisingly, "normal depth flow" hydraulic calculations are identified by FEMA as a detailed method, along with QUICK-2. However, these two methods do not account for any backwater conditions, which no doubt will be present because of the crossing of County Road 2000 West. As a result, I believe that the only appropriate way to determine the BFE is to use the other allowed detailed method, which is computer modeling using one-dimensional or two-dimensional modeling software approved by FEMA for use in floodplain studies. While this is not nearly so ominous and costly as may be assumed, clearly it is a recognized cost of significance for a two lot subdivision, but not nearly so costly as a potential cost of litigation and damage of real and personal property that is at stake.
5. *Who reviews and approves the BFE once it is completed? FEMA? Floodplain administrator?* In this particular case, both would. The County Floodplain Administrator would review for conformance or presumed conformance with the County floodplain ordinance, which again addresses all of FEMA regulation, or alternatively, a floodplain administrator could defer directly to the state NFIP coordinator's office or FEMA to review and approve prior to issuing a floodplain permit. Often non-engineering floodplain administrators choose the latter route because review of the information submitted is beyond their area of expertise, and rather than assume liability for themselves and the agency, they follow the latter procedure. However, that would delay any subdivision approval until things have gone fully through FEMA. Alternatively, if the floodplain administrator is knowledgeable of comfortable with reviewing and verifying conformance to ordinance requirements, the floodplain administrator could approve the proposed BFE and allow the subdivision process to proceed. However, there is a stipulation in the federal regulations that if a NFIP member receives updated information, or at least information of any significance, which this would be, then that member is to submit such information to FEMA within six months of receiving or approving such information. So in the end FEMA would receive the information, and may or may not opt to review and approve it. For what we are talking about here, which would be a detailed analysis of the floodplain between County



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Road 2000 West and the State Highway, I believe FEMA would review it and upon approval would issue a letter a map revision (LOMR).

6. *Could the applicant voluntarily restrict themselves to an approved house construction method (like slab on grade or building the habitable floor a few feet above grade) and then forgo the BFE study?* That is not a solution. First of all, the 5 acre or 50 lot subdivision criterion is not based at all on the building construction method. Secondly, it sounds a little bit like the question pertains to flood proofing, which is an allowed approach for commercial buildings, but not residential. Many become confused over this issue because, I'm told, in the national or international building code there is discussion about being in the floodplain with no established elevation, and to set the lowest finish floor at least 2 foot above the surrounding ground. However, that language is not consistent with or in conformance to FEMA regulations.

Essentially all of these questions are covered in the material that I sent you earlier, which I told you are part of training sessions that I have given in various situations in the past. It just so happens that Arnold Woolstenhulme was in attendance at one of them that I gave to the Eastern Idaho Professional Land Surveyor section, but clearly he could use a review. Furthermore, developers, engineers, planners, and other surveyors performing work, or realtors selling property, in the Teton basin in and around floodplains could stand to have a training session on development in approximate Zone A. Perhaps the County could sponsor that by covering my cost as a floodplain administrator to provide a few hours preparation, travel and few hours training on it, or alternatively I could set up something privately to teach such a course. There really seems to be a lot of misunderstanding regarding it, and unfortunately that misunderstanding or lack of knowledge results in people getting caught unawares, which I think causes more challenges and consternation than the actual issue of doing things correctly. Let me know. Thanks.

Sincerely,

Williams Engineering, Inc.

By: Gerald R. Williams, P.E., CFM



STUDIES - MASTERPLANS - DESIGNS - CONSTRUCTION SERVICES - REVIEWS

**WILLIAMS ENGINEERING, INC.**  
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# Floodplain Review Comments

On the

## *HERITAGE PEAKS SUBDIVISION*

**By Gerald R. Williams, P.E., CFM**  
**Teton County Floodplain Administrator**

Comments below in black text are dated 2/3/2011, and pertain to the report dated 1/18/2011.

Curt Moore sent to me a memorandum dated November 5, 2010 with a number of general floodplain management questions, Heritage Peaks Subdivision being the underlying purpose of the questions. I responded with answers in a November 11, 2010 letter (Letter) which I presume the applicant received a copy of, but it is submitted attached for convenience as I will reference it.

As per Letter answer #3, detailed methods must be used to establish the 100 year (1% annual chance flood) flow rates and base flood elevations (BFEs). We presume the report sealed 1/18/2011 is in response to the Letter.

I probably should clarify Letter #5 and provide updated thoughts. There are two courses of action. One is for the applicant to prepare a full fledged LOMR application (FEMA forms and very formalized documentation of hydrology and hydraulics), and submit for having the mapping changed through the subject property. A second approach is simply to show, using detailed methods, that the proposed building envelopes really are outside of the 100 year floodplain. I can approve that, and it would not be submitted to FEMA as a LOMR or to request any mapping change. This second approach would probably suit your purposes, would be a lot easier and quicker for you to address requirements, and is the approach I assume you are choosing. However, even with this second approach, the County must have sufficient analysis and documentation, acceptable to FEMA, for the County to approve any application, and to have it on file in case of an audit or other needs. Review comments that follow are based on the assumption that you are pursuing the second approach above rather than a mapping change. Because of limited data for review, future reviews may include new comments.

- 1. Hydrology** Two methods are presented in the report for estimating the 100 year runoff. The first is the Rational Method, presented in the report on page 4 and page 5 paragraph 3. However, for a watershed as large as the one involved with this stream, it is doubtful that FEMA would accept the Rational Method, and for various reasons the County will not accept it. The second method used, as described on page 5 paragraph 3, is a procedure typically used for reality checks, but given the nature of this project *and the relatively large size* of the drainage area, it would be acceptable for a local drainage report; that is, a drainage report necessary only to satisfy local requirements. The method estimates watershed runoff based on runoff per square mile that has been estimated using more detailed methods in nearby watersheds. Using this procedure, a runoff rate of 1550 cfs was obtained. The described curve was not in the report, but in the past I too have prepared a similar chart of runoff curves plotting FEMA FIS, NRCS floodplain, and WEI floodplain values for the region based on runoff per square



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mile, the rate decreasing the larger the runoff area. Using Teton County FEMA FIS values, which seem appropriate compared to all the others plotted, at the size of 28.4 square miles for the watershed as per the Report, the value is approximately 54 cfs per square mile, or 1534 cfs, similar to what was presented. Consequently, I could accept the 1550 cfs were it not something that involves a FEMA map and NFIP regulations that must be documented with FEMA acceptable methods. And FEMA will not accept this method.

All discussion related to the Rational Method should be removed from the report. Although FEMA will not accept the similar runoff per square mile method, if desired, results could be discussed in the report and the curve provided, if presented only as a "reality" check. Only FEMA accepted methods can be used as the basis for establishing the hydrology.

Although it is not necessarily more accurate, a hydrological option that is just as simple to use and which FEMA typically will accept, and therefore the County will accept it, is a USGS regression analysis. There are manual procedures and DOS programming methods to use to perform the regression analysis to obtain flows, but the easiest is to use the online USGS's StreamStats program available at: <http://water.usgs.gov/osw/streamstats/idaho.html>. If it doesn't go directly to Idaho as it ought, select Idaho. Then click on the Interactive Map, zoom in by one of several means, select the Watershed Delineation from a Point a button and click the map at the stream and 2000 West Roadway, and it will draw your watershed and provide information regarding it (it says the watershed is 36.2 square miles rather than 28.4). Make sure your browser will allow pop-ups for this site, then click on the Estimate Peak Flows using Regression Analysis button and peak flows are calculated, including a 100 year flow rate of 1580 cfs. It is really that fast and that simple. It provides the watershed map, data, and answer, report ready. You certainly can use other FEMA accepted methods—I only mention this as a simple option if you are not already aware of it, but whatever you use, it must be FEMA acceptable and *fully* documented in the report.

- 2. Roads and Bridges** Per Letter answer #4, detailed methods may, as appropriate, include simple normal depth flow calculations. However, also as per Letter #4, they would not be acceptable in this application because of the immediately downstream constriction of County Road 2000 West and a bridge, which would most likely cause backwater conditions for a distance upstream that must be considered in the evaluation. Therefore, we indicated in Letter #4 that FEMA accepted modeling software and practices must be used to evaluate the BFEs. HEC-RAS modeling software was referenced in the Report, but no electronic file was submitted for review, but even so, from the table on Report page C-1 and the Flood Plain Study map cross sections (page A-1), it is apparent that the model did not include crossing roads or bridges, and is therefore not evaluating any backwater condition from them. This would not be acceptable to FEMA and is not acceptable to the County. Proper HEC-RAS procedures for evaluating bridge flows must be used, which involves 4 cross sections with specific locations and conditions for each bridge. This must be used on County Road 2000 West to properly identify the backwater condition onto the site. The bridge on Hwy 33 must also be evaluated to determine the flow characteristics coming onto the site, verifying the flow rate, flow velocity, and even more importantly, that it all arrives through the bridge opening and none from weir overflow of the road that could potentially widen the floodplain on the site. The model must be FEMA



STUDIES - MASTERPLANS - DESIGNS - CONSTRUCTION SERVICES - REVIEWS

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worthy and acceptable.

3. **Report discussions and conclusions** regarding flow velocities and capacities of the channel, overbanks, and bridges should be based on model results and nothing else.
4. **Page A-1 Floodplain Limit Plotting** Once the HEC-RAS model is revised to include the roads and bridges, the water surface elevations will likely be different. However, it may be well to note now that the water surface elevation calculated is the point on the ground where the edge of the floodplain is, but that is not how the map is currently drawn. The edge of the floodplain will, to some extent parallel the contours except that the water surface elevation will be decreasing in the downstream direction. The floodplain delineation thus will not necessarily be a smooth curve more or less paralleling the river channel. For example, at cross section 1.83 (which is not labeled but should be), the WSE was calculated as 6102.2, but the floodplain limit is plotted approximately 85 feet away at elevation 6103.9 +/- . At cross section 1.85, the WSE was calculated as 6103.8, but the floodplain limit is plotted approximately 85 feet away at elevation 6105, and the limit crosses that contour several times. Between cross sections 1.70 and 1.75, nearly all the ground on the site south of the stream is below the calculated flood level, but the plotted floodplain limit shows it not being in the floodplain. Again, where the calculated and interpolated floodplain elevations match the terrain is where the limit is, and that likely will not result in a smooth floodplain curve following the stream.
5. **Data Containment of Flows** Be sure to provide base mapping that shows by contours full containment of the river flows (right now it does not as noted in (4) above), AND the HEC-RAS cross sections (graphics and data input) MUST extend at least as far out as the calculated flow.
6. **Cross Section Alignments** These are to be perpendicular to the flow. Consequently, where crossing the channel, they should be perpendicular to the channel. In the overbanks, they generally are perpendicular to the overall main channel flow direction, somewhat as shown. However, cross section 1.75 has weird bends, and cross section 1.85 heads due north from the channel and even crosses section 1.91, which cannot happen. Instead, it should head north northwest more perpendicular to the overall overbank flow direction. Flow distances between cross sections that are used in the model should be adjusted to be the modified distances between cross sections, channel lengths following the meandering channel, and overbank lengths being more the overland "as the crow flies" lengths approximately at the centroid of overbank flow..
7. **Page C-1** Provide an exhibit of the full limits of the watershed area and not truncated. If you use StreamStats, it will provide the needed exhibit.
8. **South Leigh Creek** All information presented in the report pertains to Spring Creek. No mention was made in the report of South Leigh Creek that is discussed in the wetlands report prepared by Lone Goose Environmental as intersecting the property and joining Spring Creek. The map on page A-1 shows AW Engineering computed 100 year floodplain delineation heading southwest just east of the proposed House Site 1. I suspect this may be the other creek coming in. If there is another creek on the site as mentioned, it must be properly contoured on the map AND evaluated hydrologically and hydraulically the same as for Spring Creek, using a confluence in the HEC-RAS model.



WK: 208-354-0245  
CELL: 208-313-0245

Teton County Engineer  
MEMO

150 Courthouse Dr.  
Driggs, Idaho 83422

October 29, 2010

TO: Teton County Planning and Zoning Commissioners  
FROM: Louis Simonet  
SUBJECT: Heritage Peaks Subdivision Comments

The following are my comments for the Teton County Planning and Zoning Commission meeting to be held on November 9, 2010. These items should be addressed prior to final application, and these comments should be carried over automatically as final comments.

1. This comment pertains to the drain fields for the septic systems.
  - a... Because of the following:
    - i. With the amount of possible locations for temporary surface water features.
    - ii. With the possibility of having the drain field change in size and type after the public improvements have been completed and the ownership of the lots have changed hands.
    - iii. With the possibility of the design of the drain field determining the size, or number of bedrooms, of a house.
  - b... It is recommended that something be done to verify that the next owner of the property know in advance that there MAY be an impact to the design of their home due to public health standards. Therefore, can one of the following be completed:
    - i. Can the Engineer of Record (EOR) for the subdivision certify as to the type and size of the drain field, and pre-design this system so that there are known parameters as to these drain field systems and the impacts that it would have on the lot.
    - ii. Can a note be stated on the master plan what the possible impacts of the temporary surface water features would have on the drain field.
    - iii. Can the EOR for the subdivision certify that all site suitability criteria, contained in the Technical Guidance Manual for Individual Sewage Disposal Systems, be met by the proposed location and size of the drain fields. If so can this be stated on the Master Plan, and the size, type and location of the drain fields should be clearly shown on the Plan.
  - c... This question is brought forward for both discussion and review. I feel that it would be to the benefit of the developer to pre-discuss this with myself, the county planner, and EPHID. Please feel free to contact me about this at any time. I am not fixed on only one answer and would love to hear any other possible solutions.

2. This comment pertains to the concerns of the flood plain line that is shown on the preliminary plat.

a... Please verify that FEMA Map 160581C0094C is the correct map.

b... I have a concern as to where the Flood Plain is located. Can the EOR do one of the following:

- i. Certify that the building envelopes and public works are not going to be impacted by the flood plain.
- ii. Complete a study verifying where the flood plain is located.
- iii. Require specific FEMA approved construction of the residences where they would be impacted by the flood plain.
- iv. Provide some other certification/notice that alerts the property owner of the possible impact of the Flood Plain.

3. Preliminary Plat:

a. Please show what the dedications are:

- i. Is the road dedicated to the HOA? Heritage Drive should be dedicated to a single entity so that they can have control over the road. If there needs to be additional easements dedicated to the utilities, please do so.
- ii. Is the 30' County Road ROW dedicated to the county. It appears that the property line goes to the center line of the county road. This 30' section should be a separate parcel dedicated to the county.
- iii. Is the turn around area dedicated to anyone. This should be part of the road or at least shown as an easement that is dedicated to someone. Preferably, it is part of the road property.
- iv. Who is the open space dedicated to. Who is responsible to maintain it.
- v. Who are the head gates and irrigation ditches dedicated to. They should be dedicated to the proper owners and access to them should be granted to the owners for maintenance.

b. Please locate all aspects of the plat.

- i. Please locate the drain fields. Since these will probably be shown on the Master Plan and not on the Plat at the final application, then these should be located on the master plan. See comment #1.
- ii. Please locate the building envelopes. If the building envelopes are shown on the Plat they should also be shown on the Plan. See comment #2.
- iii. Please locate the easements for the irrigation ditches and access to them.

c. Please state somewhere on the Plan the requirements for well head elevations versus the water elevation. It appears that the well will be drilled in wetlands and possibly next to a creek/ditch in which case this difference in elevation requirement for a well should be noted on the Plan. (Is should not be noted on the plat since this is not a survey item.)

d. On the road plans there is a 20'x30' landscape and mailbox area that is not shown on the plat or the plan. Please show on the plat and dedicate to the correct person/entity. Please show on the plan.

e. Legend, Please verify all labels and line types.

f. Is this a PUD or a Subdivision. All documents should state it correctly.

4. Improvement Plans (Road Plans): Sheet 1 and 2:

- a. Please provide a design for the road signs and the subdivision entrance sign.
- b. Please provide a design for the turn around. Including width, length and a plan view and cross section.
- c. Please provide a design for the mailbox and landscape easement.
- d. Road Profile View: Please show that the structural backfill will provide drainage as shown on the county standards. Typical road section shall show the bottom of the sub base the full width of both lanes and the shoulders and shall continue until it intersects the 4:1 slope. Compacted native material shall NOT be used for that portion of the 4:1 slope above the bottom of the sub-grade.
- e. ...Please state (on the plans) the inspection requirements per the Teton County standards.
- f. ...Please state (on the plans) the standards used:
  - i. Road standards:
  - ii. Well Standards
  - iii. Erosion control standards
  - iv. Septic standards
  - v. Fire standards
  - vi. Water standards
  - vii. Sewer standards
- g...Please provide a design and the sizing calculations for the culvert at the end of the road. This should include details for construction.
- h...Please label the improvement plans as such to match the development agreement.

5. Development Agreement.

- a...Section 16, As constructed plans shall be turned over to the Planning office.
- b...Section 3, Signs: the signs shall be retro-reflective, unless it is deemed that the subdivision sign is to be not-reflective.
- c...Section 6, Building permits: Can a note stating that no CO can be obtained until the improvements have been completed, be recorded on the Plan in order to notify future property owners.
- d...It may be advantageous to both the county and the developer to have the surety end a couple of months after the development agreement expires. That way, the developer can complete the construction of the public improvements by a specific date, and then the county can do the final inspections and project close out. This is just a recommendation for discussion.
- e...Section 15: final inspection request by the contractor should be in writing or by electronic mail. This request and all correspondence should be through the Planning office.
- f. ...Section 2 states that there is to be fire protection installed. Please have the Fire Dist. verify, in writing, that no fire protection is needed for this subdivision.

6. Please place a note on the Master Plan that states what was stated on comment #3 in the letter received by Eastern Idaho Public Health District. The note should state "Any construction

involving identified wetlands (including transfer lines crossing wetlands) will require prior approval from the US Army Corps of Engineers.”

7. Please verify that no wetland permits are required prior to starting the public improvements. If there are permits required please state who is responsible to obtain them.

If there are any questions please call or email.

Thanks,

Louis Simonet