

**TFW Policy Committee Response to the
Mass Wasting Effectiveness Monitoring Project Report Findings Package
Approved February 6, 2014**

PROCESS IMPROVEMENTS

1. The TFW Policy Committee (Policy) recognizes the improvements prior to 2013 in the identification and buffering of potential unstable slopes through:
 - A series of FPA processing rule makings and board manual guidance since 1999;
 - Implementation of DNR slope stability training; and
 - The recent Forest Practice Board rules, adopted in 2011, requiring the Department of Natural Resources (DNR) to conduct reviews of approved Watershed Analysis mass wasting prescriptions after the occurrence of a natural disaster having a material adverse effect on the resource characteristics of the Watershed Administrative Unit or every five years (WAC 222-22-090), whichever occurs sooner.

The recent DNR review of the adequacy and specificity of mass wasting prescriptions (MW Rx) determined the need for landowners in all approved Watershed Analysis (WSA), except those WSA requiring MW Rx reanalysis per individual landowner HCP, to either choose to perform reanalysis of the mass wasting prescriptions for effectiveness or to eliminate the mass wasting prescriptions. This action resulted in the rescinding of mass wasting prescriptions in all but three approved Watershed Analyses where landowners are conducting reanalysis.

2. Policy recognizes that the DNR has an ongoing effort of process improvements related to the review of Forest Practice Applications (FPA) with respect to mass wasting potential. Policy supports these improvements and recognizes that many of these process improvements began prior to the 2007 storm event and are continuing to date.
 - a. 2003/2004 – Board Manual Section 16 updated: Section 16 was reorganized to illustrate a methodical way to evaluate potentially unstable slopes. Further guidance was added to clarify rule requirements for Qualified Experts and geotechnical reports.
 - b. 2004 – Landslide Hazard Zonation: mapping product/screening tool made available on GIS
 - c. 2005 – Qualified Expert clarification: Qualified expert also meets the requirements of a level 2 analyst
 - d. 2006 – Clarification of Forest Practices Rule Standards for the Submission of Qualified Expert Reports: clarifying what is actually required in the report per the rules
 - e. 2008 – Clarification: Classifying Forest Practices Applications Involving Potentially Unstable Slopes or Landforms
 - f. 2009 – Watershed Analysis: Mass Wasting prescriptions reviewed and designated as specific or non-specific for the purpose of FPA classification

- g. 2011 – Watershed Analysis rule adoptions allowing landowners to perform reanalysis or rescind their mass wasting prescriptions. Board Manual Section 11 amendments regarding the review and reanalysis process.
 - h. 2013 – Mass wasting prescriptions rescinded for the majority of approved watershed analyses
3. Policy supports the following specific recommendations for further process improvements:
- a. That DNR commits to investigate LiDAR availability, and develop budget requests for a collaborative project in conjunction with the LiDAR Consortium and other potential partners to acquire LiDAR for the purposes of providing better screening for unstable slopes. Policy supports the acquisition of LiDAR based DEMs for implementing the existing rules and review processes. This includes:
 - i. Continued use of currently available LiDAR by DNR FP science team for review of FPAs.
 - ii. The assessment of the quality of LiDAR available to DNR (including gaps in quality and coverage).
 - iii. DNR investigate how currently available LiDAR can improve the SLPSTAB screening tool to better identify potentially unstable slopes.
 - iv. Using results of 4.a.iii., DNR will identify the cost and availability to acquire appropriate LiDAR coverage. This includes joining The LiDAR Consortium to access future relevant data when appropriate.
 - b. DNR will prepare a written description, to accompany PowerPoint presentations, of DNR’s process for reviewing proposed FP activities to protect potentially unstable slopes. DNR will provide this product to Policy by March 24, 2014.
 - c. DNR will develop additional documentation for landowners to complete and DNR to review for all FPAs involving potential unstable slopes or landforms. This documentation will include a new section of the FPA form, an addenda, and corresponding instructions. The addition to the FPA form and associated addenda will document the actions taken by landowners in preparation for submittal of the FPA and DNR review including but not limited to describing and confirming the items listed below in this sub section. When a geotechnical report is submitted with an FPA, the existing guidance is sufficient to ensure that adequate documentation has been provided by the landowner. However, in some situations DNR reserves the right to request more information.
 - i. Office Review, information sources utilized (screening tools, photos, maps, etc), summary of results (identification of areas of focus for field review), unless this information is already provided in the attached geotechnical report.
 - ii. Field review, Name of person(s) who conducted the field review and their title/credentials), Date(s) of field review, Spatial extent of field review within and around proposed FPA activities, unless this information is already provided in the attached geotechnical report. If a geotechnical report is not provided, the process should provide information in the instances outlined below:

- A. Documentation of any potential features identified in screening inside a FPA that did not meet the RIL definition after field verification.
- B. An indication on the FPA form if unstable features identified (RIL or other unstable feature) was avoided in the layout of the FPA.
- d. DNR will use stakeholder process in developing changes.
- e. Upon completion of subsections 4.b. and c, Policy will review.

COMPLIANCE

- 4. Policy requests DNR to include an emphasis sample within their Compliance Monitoring Program evaluating compliance with the Forest Practice Rules and to fulfill DNR’s commitment to review Accuracy and Bias, include a review of the specific avoidance or mitigation measures identified in the Forest Practice Application.

CONTINUE CURRENT ROAD AND FOREST PRACTICES PENDING FURTHER RESEARCH

- 5. Policy recognizes that the effectiveness of road prescriptions as examined in the Mass Wasting Effectiveness Monitoring Project Report were statistically inconclusive and as a result, Policy is not recommending any rule changes or further guidance development at this time. Policy supports implementation and enforcement of the forest practices (FFR) rules for all new road construction and maintenance; and continued DNR enforcement of deadlines for the completion of all RMAP requirements.
- 6. Policy recognizes that the results of the analysis in the Mass Wasting Effectiveness Monitoring Project Report do not answer all of Policy’s questions with respect to the effectiveness of harvest prescriptions to meet mass wasting resource objectives. The report found significant differences in landslide density between the No Buffer treatment and the Mature treatment. Landslide density did not differ significantly between either the Full Buffer and Mature treatments or the Full Buffer and No Buffer treatment. There is a wide range of policy opinions in interpreting these results that are thoroughly described in the Mass Wasting Effectiveness Monitoring Project Report Findings Package (May 2013). Thus, Policy is recommending the following research-related actions:
 - a. CMER will prioritize the development and implementation of the Unstable Slope Criteria Project. Policy is particularly interested in the adequacy of the gradient, slope curvature, and probability of delivery criteria.
 - b. Policy will conduct a comprehensive review of the mass wasting research strategy and make any recommended changes so that they can be incorporated into the CMER work plan and budget in March and April 2015, respectively. The review will cover all existing research in the work plan and specifically consider the following:
 - i. Assess whether natural background rates can be established and if so, the resources required to establish natural background rates and the practicality of measuring the prescription effectiveness against that benchmark.

- ii. Evaluate how “Category E” is being used and determine if there is value in further defining the geographically unique potentially unstable slopes identified under “Category E”.
- iii. What is the cost and what can we expect to learn by investigating the micro-hypotheses described in the Mass Wasting Effectiveness Monitoring Project Report Appendix C.5 for both hillslopes and roads? The hillslope microhypotheses are related to buffer blowdown, upslope harvest and roads, buffer width and density, and yarding corridors. The road microhypotheses are related to insufficient pullback on planar slopes, undersized stream crossings, inadequate water control measures, poor tread maintenance, and inappropriate road geometry.
- iv. What is the cost and what can we expect to learn by conducting the future research proposed in the Mass Wasting Effectiveness Monitoring Project Report Appendix D, especially a characterization of non-RIL landslides (App. D.3)? An improved understanding of the characteristics shared by this population of landslides may help explain their occurrence and distribution, and inform future Policy evaluation of the RIL definition.