How DNR Addresses Potentially Unstable Slopes and Landforms

The forest practices rules related to potentially unstable slopes and landforms (hereafter referred to as potentially unstable slopes) are not prescriptive; there are no unstable slope prescriptions in the rules. For potentially unstable slopes, protection of public safety and public resources is provided through an outcome-based, decision-making process that is conducted in accordance with the forest practices rules and SEPA. Through this process, DNR evaluates proposed timber harvests and construction activities on potentially unstable slopes to determine if the activities will have the potential to deliver sediment or debris to a public resource.

The exception to this outcome-based, decision-making process occurs in areas where watershed analysis has been conducted and approved. In these areas, approved watershed analysis mass wasting prescriptions were designed to address potentially unstable slopes. These prescriptions must be specific to the site or situation and do not call for additional analysis (WAC 222-16-050(1)(d)(iii)). Proposed timber harvest and road construction activities on potentially unstable slopes in an approved watershed analysis must adhere to the approved mass wasting prescriptions. If proposed activities deviate from the approved prescriptions or if the prescriptions are not specific, the forest practices application (FPA) is classified as a Class IV-Special application and is subject to review under SEPA.

Potentially unstable slopes are discrete portions of the landscape with physical characteristics that make them more susceptible to mass wasting than surrounding areas. Potentially unstable slopes are often classified according to dominant landslide type. The forest practices rules recognize four classes of unstable slopes (WAC 222-16-050(1)(d)(i)):

1) Landforms typically associated with debris avalanches, debris flows and debris torrents. This class includes inner gorges, bedrock hollows and convergent headwalls with slopes greater than 35 degrees (70 percent).

2) Landforms susceptible to debris avalanches. This class includes toes of deep-seated landslides with slopes greater than 33 degrees (65 percent) and the outer edges of meander bends along valley walls or high terraces of unconfined meandering channels.

3) Groundwater recharge areas of deep-seated landslides in glacial sediments. A change in the hydrologic regime of these landslides has the potential to accelerate a wide range of mass wasting processes commonly associated with deep-seated landslides.

4) Areas with indicators of potential slope instability that cumulatively indicate the presence of unstable slopes.

When DNR receives a forest practices application, the application is screened for potentially unstable slopes. The results of the screening are forwarded to the responsible forest practices forester for field review. The forest practices forester relies on the screening results, his/her own knowledge of the area and on-the-ground site reviews to determine whether potentially unstable slopes are present within the area of the FPA. The forest practices forester also reviews FPA's where landowners have applied unstable slopes avoidance measures to mitigate hazard and risk.

Forest practices foresters have access to consult with DNR geologists and/or interdisciplinary teams during the FPA review. The DNR geologists are licensed under the state's geologist licensing law and meet the forest practices definition of a "qualified expert". Interdisciplinary team members typically represent other agencies and affected tribes and often have unstable slopes expertise.

To be considered a qualified expert under the forest practices rules, an individual must be licensed under chapter 18.220 RCW and chapter 308-15 WAC as either an engineering geologist or a hydrogeologist, with three years of field experience in the evaluation of relevant problems in forested lands (WAC 222-10-030(5)).

If the field review confirms the presence of potentially unstable slopes, and timber harvest and/or construction is proposed in those areas, the FPA is classified as Class IV-Special and becomes subject to review under SEPA.

The Forest Practices Board (Board), through the forest practices rules, has adopted SEPA policies set forth in RCW 43.21C.020. These rules require applicants to complete an environmental checklist for Class IV-Special forest practices applications. The checklist is a detailed listing of potential environmental impacts associated with the proposed activity. The Board has established additional SEPA policies that are specific to forest practices (chapter 222-10 WAC). These policies require applicants to conduct and submit a geotechnical assessment of proposed forest practices. A qualified expert must prepare the assessment. The assessment must evaluate: 1) the likelihood that the proposal will cause movement on the potentially unstable slopes or contribute to further movement, and 2) the likelihood of sediment or debris delivery to any public resource or in a manner that would threaten public safety (WAC 222-10-030(1)). The assessment must also identify any measures that would mitigate the identified hazards and risks.

After reviewing the proposal, consulting with other affected agencies and tribes, and considering comments received from other interested parties through the SEPA review process, the DNR responsible official issues a decision under the SEPA, commonly known as a "threshold determination." In making a decision, forest practices rules require DNR's responsible official to consider:

1) If the proposal is likely to increase the probability of mass movement on or near the site;

2) Whether sediment or debris would be delivered to a public resource or be delivered in a manner that would threaten public safety and

3) whether such movement and delivery are likely to cause significant adverse impacts (WAC 222-10-030(2)).

If DNR's responsible official determines the proposed activities are likely to have a probable significant adverse impact, a "determination of significance" is issued and the applicant must prepare an Environmental Impact Statement (EIS) in accordance with SEPA requirements. If

DNR determines the adverse impacts identified in the EIS are significant and reasonable measures are insufficient to mitigate the impacts, the FPA is denied.

If DNR determines the proposed activities are not likely to have a probable significant adverse impact, a “determination of non-significance” is issued and the forest practices application is approved. In many cases, DNR’s approval of an FPA contains “conditions”, i.e., additional requirements with which the applicant must comply. The conditions usually include protection measures that must be implemented to mitigate impacts associated with the proposal.