

Forest Practices Rules and Application Processing With Respect To Unstable Slopes

Specific FP rules address the potential for forest management-related landslides that could deliver sediment or debris to public resources or threaten public safety. Protection is provided through an outcome-based, decision-making process conducted in accordance with the Forest Practices rules and the State Environmental Policy Act (SEPA) ([chapter 43.21C RCW](#); and [chapter 197-11 WAC](#) SEPA Rules). The only exception to this outcome-based, decision-making process occurs in areas where a watershed analysis (WSA) has been conducted and approved and management prescriptions are in place to address potentially unstable slopes. Additionally, the WSA prescriptions must be specific to the site or situation and not call for additional analysis (WAC 222-16-050(1)(d)(iii)). In these cases, proposed timber harvest and road construction activities on potentially unstable slopes must adhere to the approved management prescriptions stated in the WSA. The details of the WSA process as outlined in WAC 222-22 are described later in this section.

The first step in the outcome-based decision making process is a review of FPAs. All FPAs are reviewed to determine the class of the application as well as screened for other administrative purposes. Forest practices are classed based on the potential for the proposed activity to adversely affect public resources – from Class I forest practices that have no direct potential for damaging a public resource to Class IV–Special forest practices that have the greatest potential for impact. During review, the applications are screened for potentially unstable slopes using data provided by Geographic Information Systems (GIS) and remote sensing review of aerial photographs, maps, and local knowledge. When unstable slopes are potentially present, FP foresters conduct a field review and assess those areas indicated by the screening. If the field review and consultation with an FP geologist confirm the presence of a potentially unstable slope(s) and timber harvest and/or road construction is proposed in those areas, the FPA is classified as Class IV-Special and becomes subject to review under SEPA, adding additional rigor to the review process. If the potentially unstable slope is bounded out of the FPA or if the FPA follows “specific” mass wasting watershed analysis prescriptions for unstable slopes, the FPA is a Class III and is not required to go through the SEPA process.

Class IV-Special forest practices related to unstable slopes include – as described in [WAC 222-16-050 \(1\)\(d\)](#) – timber harvests, or construction of roads, landings, gravel pits, rock quarries, or spoil disposal areas, on potentially unstable slopes or landforms (see WAC 222-16-050 (1)(d)(i) below) that have the potential to deliver sediment or debris to a public resource or that have the potential to threaten public safety, and which has been field verified by DNR.

Potentially unstable slopes are often identified according to dominant landform type. WAC 222-16-050 (1)(d)(i) recognizes five groupings of potentially unstable slopes. These groups are often referred to as “Rule Identified Landforms”:

- Inner gorges, convergent headwalls, or bedrock hollows with slopes steeper than 35 degrees (70 percent);
- Toes of deep-seated landslides, with slopes steeper than 33 degrees (65 percent);
- Groundwater recharge areas for glacial deep-seated landslides;

- Outer edges of meander bends along valley walls or high terraces of an unconfined meandering stream; or
- Any areas containing features indicating the presence of potential slope instability which cumulatively indicate the presence of unstable slopes.

FPA's classed as Class IV-Special require compliance with both the Forest Practices Act and SEPA because they have the potential for a substantial impact to the environment. SEPA provides a way to identify possible environmental impacts that may result from governmental decisions. Through this process, DNR evaluates proposed timber harvest and construction activities on potentially unstable slopes to determine if the activities will have a "probable significant adverse impact." The determination is based on the agency's evaluation of the proposal – conducted in consultation with other agencies and affected tribes – as well as comments received from interested parties through the SEPA review process.

The SEPA rules require applicants to complete an environmental checklist for Class IV-Special FPA's. 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 (WAC 222-10-030). These policies require, in part, specific mitigation measures or conditions designed to avoid accelerating rates and magnitudes of mass wasting that could deliver sediment or debris to a public resource. The policies also require applicants to conduct and submit a geotechnical assessment of proposed forest practice(s) prepared by a qualified expert. A qualified expert is a licensed engineering geologist (LEG) with at least three years of experience in evaluating relevant problems in forestlands (WAC 222-10-030 (5)).

In addition to reviewing information submitted by the applicant, DNR staff conduct their own evaluation of proposals involving potentially unstable slopes, including a review of the applicant's geotechnical assessment. The evaluation often includes document and field review by an FP geologist and/or interdisciplinary team. FP geologists are both "qualified experts" and LEGs. Interdisciplinary team members typically represent other agencies and affected tribes and often have expertise with potentially unstable slopes.

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

- if the proposal is likely to increase the probability of mass movement on or near the site,
- whether sediment or debris would be delivered to a public resource or be delivered in a manner that would threaten public safety, and
- whether such movement and delivery are likely to cause significant adverse impacts (WAC 222-10-030(2)).

If DNR 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” (DNS) is issued and the FPA is approved. When the landowner proposes sufficient methods of protection for public resources in the SEPA process, a Mitigated Determination of Non-Significance (MDNS) is issued which results in an approved FPA. Additionally, in many cases, DNR’s approval of an FPA contains “conditions” or additional requirements with which the applicant must comply. The conditions usually include protection measures that must be implemented to mitigate impacts to public resources associated with the proposal.

Mitigation measures range from avoiding potentially unstable slopes to altering the methods or techniques used in timber harvest and/or construction operations. Potentially unstable slopes avoidance is the most commonly used mitigation measure and results in the lowest hazard and risk. Where timber harvest and/or road construction activities occur on potentially unstable slopes, a variety of mitigation measures are employed to reduce the likelihood of mass wasting. Possible mitigation measures can include but are not limited to; full suspension log yarding to reduce soil disturbance and damage to residual vegetation and measures that relate to the design and/or location of roads, drainage structures, and landings. Full-bench end-haul (i.e., no fill or sidecast material) construction techniques are routinely required on side slopes that exceed a gradient of 60 percent, which have the potential to deliver sediment to any typed water or wetland. Where fill material is necessary, the use of quarried rock rather than “native” soil or fill is often required to increase the structural strength of road prisms and stream crossings. These are just a few examples of the many mitigation measures used to address potentially unstable slopes. The measures used in a given situation are dependent upon the nature of the impact being mitigated.