DEPARTMENT OF NATURAL RESOURCES

OLYMPIC REGION
411 Tillicum Lane
Forks, WA 98331

360-374-2800
OLYMPIC.REGION@DNR.WA.GOV
WWW.DNR.WA.GOV

Notice of Final Determination
Taylor Downhill Sorts #30-102045
SEPA File No. 21-111801

The Department of Natural Resources issued a [X] Determination of Non-significance (DNS), [ ] Mitigated Determination of Non-significance (MDNS), [ ] Modified DNS/MDNS on November 18, 2021 for this proposal under the State Environmental Policy Act (SEPA) and WAC 197-11-340(2).

This threshold determination is hereby:

[X] Retained.

[ ] Modified. Modifications to this threshold determination include the following:

[ ] Withdrawn. This threshold determination has been withdrawn due to the following:

[ ] Delayed. A final threshold determination has been delayed due to the following:

Summary of Comments and Responses (if applicable):
Comments were received from Olympic Forest Coalition, ECY, Jamestown S'Klallam Tribe, Center for Sustainable Economy, and the Emergency Conservation Committee. See attached reply.

Responsible Official: Mona Griswold

Position/title: Olympic Region Manager Phone: 360-374-2800

Address: 411 Tillicum Lane
Forks, WA 98331

Date: 12/23/2021 Signature: Mona Griswold

There is no DNR administrative SEPA appeal.

DEPARTMENT OF NATURAL RESOURCES
1111 WASHINGTON STREET SE, MS 47014
OLYMPIA, WA 98504-7014
360-902-1600
WWW.DNR.WA.GOV

This is in response to comments received regarding the Taylor Downhill Sorts timber sale, SEPA File No. 21-111801, located in the Jefferson County, as well as regarding Washington DNR's timber harvest program for trust beneficiaries. This letter provides information outlining how this proposal is consistent with all applicable laws, rules, policies and procedures, including the 1997 Habitat Conservation Plan (HCP) and 2006 Policy for Sustainable Forests (PSF).

As described in the SEPA checklist, the Taylor Downhill Sorts timber sale proposal, Agreement No. 30-102045 is a variable retention harvest (VRH) composed of 3 units and associated right-of-ways located in the Chimakum, Discovery Bay, and Toandos Peninsula WAU[s] totaling 153.4 net harvestable acres. The net acreage includes deduction for leave tree areas within the traversed boundaries. The proposed timber sale is to be harvested using ground-based, cable/tethered, and cable harvest systems with applied timing and equipment restrictions to further limit impacts to the site.

While your letter does touch on some specifics of this proposed timber harvest, the bulk of your comments are directed toward the broader policies and plans that guide our management at the statewide level. We conduct SEPA analyses at the project level for individual planned timber harvests; we conduct environmental impact statements before adopting new policies and whenever we develop statewide plans that set standards for the use of the environment (WAC 197-11-704(2)(b)(i)). The Agency does not agree that the analysis you recommend is appropriate for including in the project level checklist. The Department will however address some of the concerns raised in your letter.

At this level of project review with a Determination of Nonsignificance, the appropriate form used is the Department of Ecology's environmental checklist, WAC 197-11-960. At this time, the SEPA Environmental Checklist does not include analysis of climate impacts. The topic of climate impacts is an evolving issue as new science emerges and agencies work to include that new science in their work. When the Department of Ecology establishes criteria that provides meaningful analysis of climate impacts at the project level, it is expected they will make updates to WAC 197-11-960 that include climate impacts in the SEPA checklist.

Sustainable Forestry

In addition to the existing SEPA process, DNR is a leader in its development of best practices in sustainable forestry. Resource and environmental protections are applied to all DNR timber harvests following the 1997 Habitat Conservation Plan, 2006 Policy for Sustainable Forests, current Forest Practices rules, and the associated Forest Practices HCP, all of which have gone through rigorous EIS reviews. Discussed in more detail below, some of these measures include riparian and wetland buffers, leaving a minimum of eight trees per acre in variable retention harvests, limiting overall size of harvest areas, maintaining hydrologic maturity, excluding work on potentially unstable slopes, and maintaining and improving road infrastructure including replacing undersized culverts to improve fish passage and water drainage.

All DNR-managed forestlands and conservation areas in Washington State are certified under the Sustainable Forestry Initiative® (SFI) program Standard. Additionally, about 176,000 acres of those forestlands are also certified under the Forest Stewardship Council® (FSC®) US Forest Management Standard. Certified forests are grown to an approved set of standards which demonstrate environmentally responsible, socially beneficial and economically viable management practices that promote responsible forestry. This unique commitment to responsible forestry recognizes that forest landowners play a critical role in ensuring the long-term health and sustainability of our forests.

The Department agrees the pledge made at the 2021 COP 26 meeting in Glasgow was historic, and we applaud the stance taken there against deforestation. However, deforestation is not the same as sustainably harvesting trees from managed forest lands. Deforestation refers to the permanent conversion of forestlands to non-forest usage such as agriculture, grazing, and commercial or residential development. Following all even-age harvests on DNR-managed lands, native trees species are replanted at stocking levels higher than existed pre-harvest. This ensures all State-owned forests are renewed, resulting in sustained levels of forest cover into the future.

Carbon Sequestration

Like you, leadership and staff at DNR are concerned about how sustainable forest management can mitigate the effects of climate change. For instance, the DNR's Natural and Working Lands Carbon Sequestration Advisory Group is actively considering our role in carbon sequestration on managed and un-managed forest lands. Forests are the most efficient means we have for removing carbon from the atmosphere. They draw in vast amounts of carbon dioxide and store carbon as biomass. But we know this is only one way that forests contribute to climate solutions. By balancing ecological, economic, and social outcomes, we can compound the benefits forests provide. To begin with, active management of forests for timber and revenue enables us to push back against economic pressure to convert those forestlands to non-forest uses. Management for timber also helps maintain a steady supply of local logs to local mills. When we source our wood from nearby forests, we reduce the amount of fossil fuel required to bring logs from forests to mills and from mills to local retailers. We know that a substantial percentage of wood from State lands ends up as dimensional lumber, plywood, and other manufactured building materials. Forest products used in construction store more carbon—and their manufacture emits far less carbon dioxide, methane, and nitrous oxide—compared to non-wood alternatives such as concrete, steel, brick, and plastics.

When it comes to sequestering carbon in our working forests, DNR does more than most large forest landowners in Washington. For example, our rotation ages tend to exceed the industry average for forest managers in the Pacific Northwest. On lands covered by our Habitat Conservation Plan, we leave larger riparian buffers and more habitat trees than are required by law. In total, close to half of the forested trust lands we manage are deferred from harvest for ecological reasons. To quantify these carbon benefits, we worked with partners at the US Forest Service to conduct an inventory of carbon on both private and public forestlands across Washington.

Depleted Water Supplies

The DNR is aware of the recent literature concerning the impact of harvesting on peak and long-term summer stream flows in the Pacific Northwest. In small basins (area < 10km2), summer low flows may decrease following the establishment of a younger stand if that replanted cohort is not managed in a

way that balances changes in runoff caused by different stand ages (Moore et al., 2020). Young stands (0 to approximately 15 years) can increase the amount of precipitation that enters the soil and becomes runoff relative to natural, older stands (Grant et al., 2008). As the stand ages, evapotranspiration rates increase and eventually exceed evapotranspiration rates typical of a natural, older forest (Perry and Jones, 2017). We are presently reviewing the newest low-flow science; however, given the protections afforded by the HCP and PSF, a relatively small proportion of the basin area is managed for timber production in DNR-managed watersheds compared to those studied and we suspect that DNR harvest impacts on summer-low flows are low. For example all DNR-watersheds include wide, continuous riparian buffers and other protected areas that provide considerably larger protections than regulatory requirements in Oregon. Also, riparian buffers cited in Segura et al. 2020 measured 15 meters, while HCP prescribed riparian buffers range from 30 to over 55 meters. In addition, the DNR manages 75 percent of basins in the rain-on-snow zone as hydrologically mature forest cover. As the summer-low flow science matures the DNR will evaluate if the adaptive management process needs to be updated to account for potential DNR-management effects on low flows.

Additionally, the DNR is presently monitoring stream flow in small, headwater channels in the Olympic Experimental State Forest (OESF) as part of the Long Term Riparian Monitoring Study. The intent of that study is to evaluate if the DNR is meeting the HCP riparian conservation objectives and to guide the integration of habitat conservation and timber production. These flow records may provide additional insight on whether or not DNR forest management are impacting low-flows.

Finally, unlike the large-scale clear cuts of the past, the DNR aims to distribute smaller timber harvests across the landscape, separated by riparian and habitat buffers, reducing the impacts to any single watershed. At any given time, most medium-to-large catchments (area > 10 km^2) have a mix of harvest units in various stages of growth which may result in varied levels of late summer streamflow generation at the stand level, but more stable levels at the landscape level. In addition, larger catchments also have more storage reservoirs such as wetlands, lakes, and deeper aquifers, which may sustain low flows.

Warming waters

The stream buffers required by our Habitat Conservation Plan are designed to protect streams from temperature fluctuations. Potential impacts on summer stream temperature in the perennial channels caused by tree harvests can be inferred from the forest hydrology literature. In a study on buffer width and stream temperature in perennial streams, Janisch et al. (2012) observed that summer water temperature can increase in streams protected by a buffer width of 10 to 15 meters, or 32 to 49 feet, but that increase depends on the length of the channel and the presence of wetlands in the harvest area. Generally, impacts on water temperature have been found to be insignificant at buffer widths ≥ 30 meters or 97 feet (Brazier and Brown, 1973; Davies and Nelson, 1994; Gomi et al., 2006; Sweeney and Newbold, 2014). If all perennial streams and a buffer width of 30 meters are excluded from harvest, the potential for changes in summer stream temperature in the perennial streams is considered low.

The Riparian Management Zones (RMZ) prescribed in the DNR State Lands HCP are larger than the findings discussed above. The HCP prescribed buffer widths on Type 1, 2, 3, and 4 streams are at least 100 feet, exceeding the 30 meter (97 feet) wide buffer where impacts to water temperatures were found to be insignificant. Theses RMZ buffers, which were evaluated in the FEIS for the State Lands HCP, are, in part, in place to shade streams and prevent stream warming. Stream protections for the Taylor Downhill Sorts proposal, described in section 3.b of the checklist, includes average 150 foot buffers on

Type 3 streams and a minimum 100-foot buffer on Type 4 streams. Seasonal channels and smaller perennial channels, or Type 5 streams, may not have a buffer, but are often protected with leave trees.

As science on this topic evolves with changes to the climate, it may potentially change or inform our adaptive management process for determining DNR buffer specifications. The DNR is currently researching the impacts of forestry at the watershed level in the Olympic Experimental State Forest (OESF). This research is part of DNR's adaptive management commitment in the State Lands HCP. Water temperature is one of the elements that is being studied.

Increased wildfire risk

DNR is acutely aware of the challenges inherent in meeting our economic, ecological, and social goals while making the forested landscape more resilient to catastrophic wildfire. We have been hard at work developing solutions. In 2017, the State legislature passed Engrossed Second Substitute House Bill 1711 Prioritizing lands to receive forest health treatments. That law directed DNR to develop and implement a policy for prioritizing investments in forest health treatments to protect State lands and state forestlands. Work under 1711 has enabled DNR to identify, prioritize, and treat forest stands east of the Cascade crest that are less resistant to disease and insect outbreaks and therefore more susceptible to catastrophic wildfire. These treatments include site preparation, reforestation, even- and uneven-age harvest, road realignment for fire protection and aquatic improvement, and prescribed burning.

On the west side, we rely on the full range of options in our silvicultural toolbox to keep stands healthy and help decrease wildfire risks. Site preparation and vegetation management, for example, keep brush species and invasive weeds at bay and expedite the establishment of young stands. Burning slash piles can help commercial forest managers like us decrease the risks described in the Stone, Hudak, and Morgan article you referenced. Precommercial thinning treatments lower density, reduce a stand's fuel load, decrease competition, and lead to larger and healthier trees. But regardless of our forest management practices, we know that fire on the landscape is natural and cannot completely be avoided. To help communities in the wildland urban interface protect themselves from wildfire, DNR works with local fire districts, conservation districts, counties, and WSU Extension programs to help Washington residents benefit from the Firewise USA Program.

Increased incidence and severity of landslides

We agree that it is widely accepted that timber harvest reduces root strength for approximately 3 to 15 years after harvest and root strength reduction can increase landslide hazards. All DNR timber sales are screened for slope stability hazards by a team of geologists both remotely prior to field work commencing and in the field as the site specific geology warrants. The geologists also provide recommendations during the harvest layout process to protect areas with elevated shallow landslide hazards. The Taylor Downhill Sorts proposal has been reviewed by a licensed geologist and protection measures applied as described in section B.1 a-h. The Forest Practice Application (FPA) process, which includes Timber, Fish, and Wildlife (TFW) review, involves a review by a Forest Practices geologist. The Forest Practices geologist evaluates proposals to verify compliance with regulations that are designed to limit the potential impacts to slope stability.

We understand that forest roads can change hillslope hydrology, which can result in landslides and stream sedimentation. Engineers carefully design roads with input from geologists to minimize landslides hazards and to disperse runoff onto stable hillslopes, not into streams. DNR road construction and maintenance is designed to avoid directing runoff into the stream channel networks and to meet and often exceed Forest Practices rules including frequent cross drains, properly-sized culverts, and erosion mitigation measures. In addition, our staff conduct road patrols throughout the winter to quickly respond to drainage issues that arise during rain events.

Increased risk of flooding

Harvest area thresholds at which a measureable increase in peak flow rate occurs (Grant et al., 2008) are used to guide DNR harvest plans upstream of a potentially sensitive channel. Depending on channel morphology, the peak flow rate at which the channel bed becomes unstable ranges from roughly a 1-year flow (a flow magnitude that occurs on average once per year) in lowland channels to a 25 to 50-year flow in headwater, cascade, or colluvial channels. In rain-dominated watersheds (watersheds in which peak flow rates are generally in response to rainfall events), flow rates larger than a roughly 6-year event are not affected by surface runoff changes caused by harvests (Grant et al., 2008). In contrast, peak flow rates in rain-on-snow or snow-dominated watersheds may be more sensitive to hydrologic changes caused by tree harvests. In snow or rain-on-snow dominated zones, a channel stability assessment conducted by a forest hydrologist or other trained specialist is often used to determine suitable harvest size. Regardless of location, through careful planning, the harvest location, logging method, and roads are tailored to avoid impacts to floods and/or damage to the channel network.

DNR State Lands' HCP protects streams with riparian buffers, protects wetlands with wetland buffers, and has a minimum of 8 leave trees per acre which help capture rain water and ground runoff. DNR has a hydrologic maturity procedure to minimize adverse effects of rain-on-snow events to ecosystems that support salmonids. DNR additionally is researching the impacts of forestry at the watershed level in the Olympic Experimental State Forest (OESF). This research is part of DNR's adaptive management commitment in the State Lands' HCP. Peak flow is one of the elements that is being studied.

The Department also adheres to current Forest Practices rules and best management practices for road construction and maintenance. This work helps prevent sediment delivery to typed waters, avoid improper drainage patterns that may create slope failures, and reduce flood impacts and risks. This includes replacing or repairing undersized culverts to improve fish passage and water drainage.

Invasive species risk

Invasive plant species are a challenge for all land managers, regardless of ownership or land use. DNR actively manages to reduce the impact of invasive species through roadside brushing and/or herbicide applications as well as in-unit silviculture treatments. As part of the planning process for each harvest unit, region silviculture staff works with the local foresters to create a silviculture plan, including type and species of seedlings and series of silviculture treatments specific to that site to ensure a successful regenerated stand of trees. DNR's strategy for disrupting the spread of invasive species is to conduct roadside herbicide treatment of the haul routes leading to planned sales the year prior to the sale for reduction of spread to the harvested unit. Rock pits are also commonly planned for treatment of invasive species. Additionally, contractual language is often used for sales where there is a higher

concern of invasive species spread. This contractual language requires operators to clean vehicles and equipment prior to entering State lands as a means to limit the potential spread of invasive species.

Increased risk of harmful algal bloom

As discussed above, the DNR State Lands' HCP protects streams with riparian buffers and protects wetlands with wetland buffers. These buffers, such as those discussed above for this proposal, keep streams and wetlands shaded preventing stream warming. These buffers also protect water from forestry related chemicals. Forestry related herbicides and fertilizers are not used within the buffers of streams or wetlands on DNR-managed lands including along roads. At this time, the only fertilizer being applied on State lands is in the form of post-consumer biosolids and this is only being applied in King County through a lease agreement. The DNR does not currently apply chemical fertilizers on State lands. The decision to use fertilizer is based on foreseeable challenges to reestablishing a healthy stand where fertilizers can help mitigate that risk. DNR is actively researching impacts of forestry, including stream temperatures, and peak flow.

In summary, all of the concerns raised in your letter address disagreements with statewide-level policies and plans, rather than the specific Taylor Downhill Sorts proposal. Therefore, the points raised in your letter do not change the determination of this proposal. The SEPA checklist was properly completed and all relevant policies and plans have been followed. The proposed project is in accordance with all applicable laws and department policies, and therefore the concerns you have raised do not warrant a withdrawal of the determination.

References

Brazier, J and Brown, G, 1973, Buffer strips for stream temperature control, Forest Research Laboratory, School of Forestry, Oregon State University, Research Paper 15.

Davies, P and Nelson, M, 1994, Relationships between riparian buffer widths and the effects of logging on stream habitat, invertebrate community composition and fish abundance, Australian Journal of Marine Freshwater Resources, V.45

Gomi T., Moore, R., Dhakal, A., 2006, Headwater stream temperature response to clear-cut harvesting with different riparian treatments, coastal British Columbia, Canada, Water Resources Research, V. 42

Grant G., Lewis, S., Swanson S., Cissel J., McDonnell J., 2008, Effects of forest practices on peak flows and consequent channel response: a state-of-science report for Western Oregon and Washington. Pacific Northwest Research Station, General Technical Report PNW-GTR-760

Janisch, J., Wondzell, S., Ehinger, W., 2012, Headwater stream temperature: Interpreting response after logging, with and without riparian buffers, Washington, USA. Forest Ecology and Management, V. 270

Kuras´, P. K., Y. Alila, and M. Weiler (2012), Forest harvesting effects on the magnitude and frequency of peak flows can increase with return period, Water Resources. Researh, 48, W01544, doi:10.1029/2011WR010705.

Moore D., Gronsdahl S., McCleary R. (2020) Effects of forest harvesting on warm-season low flows in the Pacific Northwest: A review. Confluence. V. 4 n. 1

Perry T. and Jones J., 2016, Summer streamflow deficits from regenerating Douglas-fir forest in the Pacific Northwest, USA, Ecohydrology 2016;1-13

Sweeney B., Newbold, J., 2014, Streamside forest buffer width needed to protect stream water quality, habitat and organisms: a literature review. Journal of the American Water Resources Association, V.50