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Comments: Reviewing Official

Region 6 Regional Forester

Pacific NW Region

USDA Forest Service

1220 SW 3rd Ave., Portland, OR 97204

Date: May 29, 2023

Re: Objection to April 2023 North Fork Stillaguamish Landscape Analysis Project #61659 EA, DN & FONSI

From: D. Brady Green

Reviewing Official:

I object to this project as proposed. Previously, I provided comments on May 21, 2022 on the April 4, 2022 NF Stillaguamish Landscape Analysis Project #61659 scoping letter and my May 21, 2023 letter on the February 2023 Draft Environmental Assessment (EA) (see attached). All my previous comments to the scoping document, and to the Draft EA, still apply and should be included as part of my objections to the April 2023 North Fork Stillaguamish Landscape Analysis Project #61659 Environmental Assessment, Decision Notice and Finding of No Significant Impact.

The stated project purpose to address road management needs, climate change adaptation, watershed management and provide forest products is admirable. Although part of the Purpose and Need for this project is to enhance the health of streams and associated aquatic ecosystems, by modifying the transportation system, the current and future condition of the watersheds in the project area, are at a high risk, considering the extensive areas of natural soil instability, history of rain-on-snow flood events, and other factors as described above. In addition, according to the Transportation Report, an estimated 174 miles of roads would be used for timber haul, plus 63 miles of new specified roads, a significant amount of road impacts.

Due to the poor track record of having virtually no road maintenance conducted on the MBS NF (including in the Deer Creek, Higgins Creek, and upper NF Stillaguamish River systems) over the last 10 years or so, and the lack of adequate funding for required staff with technical skills to conduct the numerous tasks identified in the Project Design Criteria (Appendix B), it is highly unlikely that this proposed project is even feasible.

In general, I support the need for thinning second growth stands in the NF Stillaguamish and Deer Creek watersheds. However, due to the glacial geology, sensitive soils and steep topography, history of rain-on-snow flood events, and to the extent of naturally occurring unstable soils, slope stability issues, poor road maintenance, and the past history of extensive logging and road building impacts in these watersheds, I am very concerned about conducting variable density thinning at the scale (up to 17,363 acres in alternative 2) being proposed by this project to be conducted over 15 years. There are 352 timber stands proposed for commercial and non-commercial (stand improvement) treatment totaling (up to 17,363 acres in EA Table 6 page 8, however 19,169 acres in Tables 4, 7 & 9 in the Silviculture Report).

In your 4/14/2023 "Response to Comments" you mention updated maps (pages 12-13; Maps 2 & 3) in the soils report. Although these maps only appear in the Soils Report, they are not discussed anywhere in the report itself, or in the EA, and the only place they are discussed at all, is in your response to my comments. These new soils stability maps do a great job of visually displaying, and reinforcing, my overall concerns about the significant amount of unstable soils in the proposed project area and the high risk of failures and damage that could result from the proposed timber stand thinning and road-related activities for the project.

Over 193 miles of roads (EA Table 13) out of 267 total miles (Table 1, page 11 in Transportation Report) are proposed for treatment in the project area. This is 72 % of all the roads in the project area will be involved in some kind of treatment, which is a significant amount of road-related activity that would occur with the project.

The high risk that the proposed actions (commercial and non-commercial thinning in Riparian Reserves, timber harvest and road construction activities, etc.) would have on adjacent, and downstream riparian and other

aquatic ecosystems (especially ESA listed fish species) in these high risk and sensitive watersheds, is not justified. Due to the combination of extensive areas of unstable soils and past timber and road management activities in the project area, and history of rain-on-snow flood events, two of the four major project needs, Aquatic and Riparian, will not be met. Thus, several of the ACS Objectives would not be met with the project as proposed.

The total acres to be treated in Alternative 2 is up to 17,364 acres, which is a significant amount of area proposed for treatment, considering concerns about the high risk of impacts to the sensitive subwatersheds in the project area. My concerns are due to the combination of extensive glacial geology, sensitive soils and steep topography, and to the extent of naturally occurring unstable soils, slope stability issues, poor road maintenance, history of rain-on-snow flood events, and the past history of extensive logging and road building impacts in these watersheds

I am particularly concerned about proposed treatments (3,005 acres in alternative 2) along 152 miles of streams and riparian reserve non-commercial thinning along 236 miles of streams, would create a significant risk to the watersheds in the project area. In addition, I am concerned about 128 miles of NFS system roads identified for log haul activities that would result in 44 miles of additional road mileage and new road soil disturbance expected from new temporary roads, skid trails and landings within ground-based harvest units.

Even with the proposed BMP's, US Army Corps of Engineers Regional General Permit, USFWS and NMFS requirements, water quality standards, project criteria, etc., due to the extent of unstable soils in the proposed project area, there would still be a high risk that the project as proposed, would result in negative impacts to the aquatic habitats in Deer Creek, Little Deer Creek, Higgins Creek, and upper NF Stillaguamish River subwatersheds.

The Following Key Areas Continue to be Major Concerns:

1. Watershed Analyses for Project Area out of Date and Need to be Updated/Amended

Watershed analysis is one of the principal analyses for implementing the Aquatic Conservation Strategy (ACS) set forth in the Northwest Forest Plan (USDA & USDI 1994). Two old watershed analyses have been conducted that cover the NF Stillaguamish LA project area which includes two Tier 1 Key Watersheds. These are the Deer Creek WA (1996) and the North Fork Stillaguamish WA (2000).

According to in the ROD S&G's NW Forest Plan (USDA FS & USDI BLM 1994) watershed analysis will be an on-going, iterative process that will help define important resource and information needs (USDA FS 1995). As watershed analysis is further developed and refined, it will describe the processes and interactions of all applicable resources. It has been 27 years and 23, years, respectively since these two watershed analyses were completed. Since then, ESA federal listing of threatened species status for the North Fork Stillaguamish Chinook (1998), Bull Trout (1999) and Steelhead Trout (2003), has occurred. In addition, external watershed partner monitoring results, changing management conditions, and reoccurrence of large flood events from 1995-1996 and into the 2000's time period have occurred. These management activities should have been included in an updated watershed analysis for the project area.

Since 1996 and 2000, many land management activities and habitat changes have occurred in this project area, as well as downstream private and state lands in these watersheds, making these watershed analyses badly out of date and in need of update, revision, or amendment, that reflect these changes. In addition, this project involves thinning RR to harvest non-successional trees and to actively manage roads (temporary and system) over a period of at least years 15 years.

The EA, and specialist reports, do not appear to have used much of the Deer Creek or The North Fork Stillaguamish watershed analyses.

Considering that only 44 out of 352 forest stands proposed for variable density thinning have had stand exams,

that means that 308 stands have no information. Also, the Fisheries Report states that "This report is a quantitative analysis of readily available HGIS data that has not been verified for specific locations associated to this project." This implies that there still needs to be a lot more fish/aquatic work on the ground in order to determine project needs, let alone to be able to implement this proposed project.

These statements indicate to me that not much on the ground data has been collected and that there are a lot of unknowns about this project area, which considering the extensive unstable riparian reserve areas (small, steep, intermittent channels, etc.) along Deer Creek, Higgins Creek, and Little Deer Creek, makes me very concerned about the potential negative impacts that could occur if the project is implemented as proposed.

In your 4/14/2023 response to my 5/21/2023 comments, and others, regarding watershed analysis: You state that "While the watershed analyses may be older, they do meet legal requirements for their use." The NWFP states that a watershed analysis is required before timber harvest can occur in key watersheds, but it does not specify a timeframe for when existing watershed assessments need to be updated. The existing condition information included in the EA and specialist reports sets the baseline for analysis and as such, includes more current information than what was included in the watershed analyses."

Based on the information provided in the EA and specialist reports, there does not appear to be much new information provided and that much more on the ground information that better reflects the changes that have occurred in the watersheds covered by the Deer Creek or the North Fork Stillaguamish watershed analyses still need to be provided before moving forward on this proposed project.

2. Concern About Economic Viability of the Project

According to the Silviculture Report, "There are about 352 stands that are proposed for commercial and non-commercial (stand thinning) treatments and total approximately 19,169 acres." However, the report also states that "Common Stand Exam (CSE) data was collected in 2021 for (only) 44 of the stands proposed for variable density thinning in the eastern portion of North Fork Stillaguamish Vegetation Project Area. After stand exams were performed, a change in the project boundary before scoping, included areas that were not sampled." Consequently, 308 stands have no information and that "Data would need to be collected and analyzed for the expanded section of the project area prior to implementation to ensure compliance with all conditions required for treatment as part of condition-based management."

The Silviculture Report also states that "Estimated acres presented are maximums and subject to change. According to recent timber sales on the MBD NF and project design, treated acreage is expected to reduce by 50-60% of total stand area. This is due to portions of stands containing no-cut riparian buffers or being inaccessible for timber harvesting equipment. Road reconstruction costs may also be prohibitively high in some areas, making it not economically viable to include certain stands and associated access roads in a timber sale when the value of the timber to be harvested is less than the costs of harvest."

I submit that, due to the extensive areas of naturally unstable soils in the project area, that when actual field work for each stand and road access is finally completed, many stands will be dropped as a result, and therefore there will not be enough commercial timber value left for a viable timber sale contract.

The EA states that "Active management can be used to implement strategies and adaptation tactics to address climate change sensitivities." I think that this statement is very optimistic for a number of reasons. In order to restore riparian habitat and transportation systems within the project area will require adequate funding and staffing to have a chance of accomplishing any of the objectives. The MBS NF has received very little funding for road maintenance over the last 10 years or so and lacks adequate engineering staffing. Where is the funding going to come from to accomplish all of these admirable objectives?

Your 4/14/2023 response to my 5/21/2023 comments, and others

Regarding my question about where the funding will come from to accomplish all of the action items for this project you state that "Funding may come from appropriations, grants or partnerships cooperation to accomplish. Note that the completion of NEPA requirements is often a prerequisite when applying for funding sources."

I understand that it is kind of a "chicken and egg" situation with funding, however, there are so many up-front tasks that do not appear to be taking place, with the available MBS NF funding and staff, making the proposed project susceptible to failure, unless significant funding occurs right now to provide adequate staffing. With the present uncertain federal government funding, with the impasse related to the "Debt Ceiling," it is not reasonable to assume that there will be adequate funding available anytime soon, to prepare this proposed project considering that there are so many outstanding tasks.

3. Concern About Continued Watershed Impacts

Continued watershed impacts (ground disturbance, soil erosion, etc.) from opening and closing roads to conduct treatments during the 15+ years of project operation in watersheds that are so sensitive due to combination of a significant amounts of natural soil instability and previous timber and road management problems.

According to soil mapping conducted by Snyder and Wade (1970) the project area contains extensive areas with deep glacial soils and deep glacial lake-deposit soils (Lacustrine) which are generally highly erosive and unstable as well as deep, unstable soils occurring on steep toe-slop and midslope drainages). The valleys of Deer Creek, Little Deer Creek and Higgins Creek have a considerable amount of deep, unstable, glacial lake deposits, till and outwash soils and this instability is caused by a combination of steep slopes, fine textured plastic subsoils and restrictive drainage and natural deep-seated failures frequently occur and are greatly accelerate by management activities (Snyder and Wade 1970).

The EA states "The proposed actions would affect no more than 11,972 acres of forest by commercially thinning smaller trees from the stand, retaining a residual stand of about 63% of the original stand basal area. This scope and degree of change would be minor relative to the amount of forest land being 182,261 acres in the watershed." I disagree, as this does not include the disturbance from treating over 193 miles of roads out of a total of 267 miles in the project area and the fact that much of the watershed contains significant number of areas containing naturally unstable soils at high risk of erosion and slope failure, as shown in Maps 2 & 3 in the Soils Report.

It is notable that 5 out of the 8 subwatersheds in the project area had a significant number of indicators (Aquatic Biota, Aquatic Habitat, Roads & Trails and Soil) with low ratings. In particular, Day Creek, French-NF Stillaguamish R, Headwaters NF Stillaguamish R., Lower Deer Creek, Segelsen Creek- NF Stillaguamish R., and Upper Deer Creek. To me these ratings point out the risk of conducting timber stand treatments and road-related treatments in the whole project area.

The Hydrology Resource Effects Analysis states "There is little potential for the proposed action alternatives to have long-term adverse effects on the geomorphic, hydrologic, or riparian characteristics and aquatic habitats in affected watersheds." I disagree. With the existing conditions due to a combination of factors: extensive naturally unstable soils as shown in Maps 2 & 3 in the Soils Report, glacial geology, steep topography, road failures, poor road maintenance, landslides, extensive logging history, significant history of rain-on-snow flood events, combined with expected climate change impacts, the NF Stillaguamish and Deer Creek watersheds will still be at high risk if the proposed project is implemented.

Your 4/14/2023 response to my 5/21/2023 comments, and others

States that "The thinning activities are not likely to cause as much soil disturbance as a low to low-moderate fires burn severity within their watersheds. Therefore, a flooding regression equation analysis was not necessary

because the increases in storm runoff is not likely to increase greatly due to these proposed activities alone. If the region receives more precipitation, flooding would be similar to current conditions."

I disagree that comparing potential impacts to fire severity is reasonable because due to the many unknowns in the 308 potential stands and the significant amount of natural instability of these subwatersheds, especially Deer Creek, Little Deer Creek, Higgins Creek and upper NF Stillaguamish River, the risk of impacts from the proposed project activities could be significant.

Your 4/14/2023 response to my 5/21/2023 comments, and others, regarding water quality concerns in Deer Creek and NF Stillaguamish River:

You state that "The Deer Creek and NF Stillaguamish River are a priority to us, as they are listed as impaired stream segments within the project area. We do not want to cause any rehabilitation in the area to be undone. The updated maps in the soils report on pg. 12-13 show areas that do not have treatments proposed and areas that require a soils survey before implementation. Thank you for your comment and information. Temperature gages are recommended to be out in to monitor these important water ways."

That is helpful to now have the two new updated maps in the newer (4/10/2023) Soil Resource Effects Analysis: Map 2. Identified highly unstable areas and Map 3. SRI layers were categorized as High, Moderate, and Low risk of stability. Despite these two new maps appearing in the new Soil Report, other than in your 4/14/2023 response to my comments, nowhere in the EA, or the Soils report, was this new soils information referenced or even discussed.

Summary of these new maps:

Map 2. Unstable Soils & Project Stands - Identified highly unstable areas. There is a significant amount of "Unstable & Very Unstable" (red) and "S8 Soils" (purple) shown in the Deer Creek, Little Deer Creek, Higgins Creek, and middle to upper NF Stillaguamish River portions of the project area, with many located immediately adjacent to potential project stands (commercial & non-commercial).

Map 3. SRI Natural Stability & Project Stands - SRI layers categorized as High, Moderate, and Low risks of stability. There are very few (4), small areas shown as "Very Stable" (no evidence of failures) (dark green) scattered throughout the project area and none of these are located in potential project stands. Much of the "Stable" (occasional failures observed) (light green) areas are not located where potential stands (commercial & non-commercial) are shown. The majority of potential stands (commercial & non-commercial) are located in "Moderately Stable" (several failures observed) (light orange) areas. These new maps display further evidence of the significant amount of unstable soils in the proposed project area.

Your 4/14/2023 response to my 5/21/2023 comments, and others

States "The indicators of Aquatic Biota and Aquatic Habitat may have low ratings due to natural issues with sediment and unstable soils as well as road related activities. Roads would be improved in this project and soil ratings in this region will continue to be low due to the geologic sources. Whether this project is completed or not, the overall condition of these watersheds is good, which indicates that rehabilitation efforts may have the most potential benefits in regards to wildlife and fish habitat."

The concern is that with intensity of activities proposed (thinning stands in riparian areas, tree tipping, new roads, etc.) for this project in subwatersheds that already have a significant amount of natural soil instability, the risk of further exacerbating these problems is significant.

4. Concern about the ability of existing USFS staff (technical expertise and knowledge)

Appendix B identifies 81 different USFS enforcement tasks that will be required for the project preparation and implementation: Botany - 11, Recreation - 9, Soil, Water & Fisheries - 36, Wildlife - 14. Many of these tasks are assigned to contract administrators, timber sale administrators, project administrators, and numerous specialists (engineers, hydrologists, soils, etc.). How is the MBS NF going to get adequate funding to provide staffing to accomplish the 81 for this proposed project?

Project design Criteria with 352 timber stands scattered over a large area and due to the complexity of meeting the required design criteria (multiple laws, regulations, BMP's, etc.). Also, I have concerns about the ability of the MBS NF to find the funding up front to hire staff that have the technical skills to meet all the requirements of this project as proposed.

The Fisheries Specialist Report states that "This report is a quantitative analysis of readily available HGIS data that has not been verified for specific locations associated top this project." "A new revised report will be required if: 1) the proposed Action is modified in manner that cause new effects not previously considered; 2) new information becomes available that reveals the actions may affect Special Status fish species or habitat in a manner or extent not previously considered and disclosed; 3) a new fish species is listed; or 4) the project is modified in a way to necessitate additional analysis, such as the addition of an alternative."

This implies that there still needs to be a significant amount of fish/aquatic work left to do on the ground before the project can even be considered for implementation.

Your 4/14/2023 response to my 5/21/2023 comments, and others

States "Our dynamic geology can present challenges with land use and management activity. The hydrology and soils analyses we conducted knowing that safety and stability are critical for this project area. As a response to the concerns regarding staff's technical expertise and knowledge, a consultation with an additional expert Soil Scientist was also performed, who was supportive of our design features."

Your 4/14/2023 response to my 5/21/2023 comments, and others

States that "The MBS is currently in the hiring process of a Soils Scientist. Hydrology specialists are receiving additional geologic hazards training this summer and we take risks of landslides and mass wasting very seriously. Staying current in effective analysis methods will always be ongoing for our staff, and the MBS is dedicated to meeting the need for growth and development, as well as hiring qualified and effective individuals to serve on the Forest."

With all the Project Design Criteria tasks identified in Appendix B, I don't think that a consultation with an additional Soil Scientist and some training for hydrologists is going to do much to help meet all the required tasks. This is an admirable goal but to do all these things requires adequate funding.

5. Concern about mechanical felling and/or tipping trees into stream channels without conducting hydrological modeling prior to tree placement

Recent experiences in the North Fork Nooksack River system (Ruth Creek near Hannegan Pass Trailhead and NF Nooksack River near Excelsior Group Camp) where the USFS used tree falling to place trees into streams and rivers for restoration purposes resulted in serious damage to stream channels, stream banks, aquatic habitat, adjacent roads and even loss of access to an important trailhead into the North Cascades National Park. Without conducting hydrological modeling prior to tree placement to estimate storm flows and channel capacity, these tree placements will result in more adverse flooding, dam break floods, severe bank erosion, and more habitat damage will occur. The regional guide (USDA FS 2019) states on page 73 that "Tree felling shall not create excessive stream bank erosion or increase the likelihood of channel evulsion during high flows."

However, the guide does not include any provisions for conducting pre-project planning or modeling to determine potential benefits or risks.

Creation of complex riparian structure by thinning in RR's sounds great, however, many of these riparian areas that have identified stands for treatment, are in, or immediately adjacent to, areas with very unstable soils and on steep ground. My concern is that the damage resulting from getting into these areas to thin trees and dropping trees into stream channels, may be more than any habitat benefits that might result.

Although the REO approved the plan for changes to LSR in 2011, to my knowledge they have not approved the thinning and tree tipping into stream channels within Riparian Reserves as proposed for this project.

The EA states that "Large wood supplantation may involve tree tipping, which could include felling or pushing (with heavy equipment) live trees (generally 18-24 inches in diameter) into channels and floodplains. LWD actions would be technically informed by a collaborative approach between Forest Service, Tribes and Washington Department of Fish and Wildlife (WDFW)." What does "technically informed" mean? Does this mean on the ground surveys or technical ID team meetings to determine which trees to push or tip and determine hydrological consequences? How many sites will be visited? This implies that there is a lot more work remaining before a viable project can go forward.

6. Condition-Based Management (CBM)

CBM It is used in the EA for RR for Condition 1 types of riparian areas to justify treatments inside of the RR in the name of improving habitat. It seems to be an attempt to cut corners by collecting less on the ground data and extrapolate existing data in order to get around NEPA compliance by allowing proposed treatments to be aligned post treatment.

The Hydrology Report seems to be referring to it in Table 3 on page 6 as resource condition indicators and then in Tables 5 & 6 uses condition-based descriptions, but otherwise does not define CBM.

The Fisheries Report states on pages 28-29 "Alternative two proposes a condition-based approach to identify the appropriate buffer width on both perennial and intermittent non-fish streams. During field verification of various perennial and intermittent streams in the MBS Snoquerra Landscape Analysis two common ecological relationships connected to vegetation functions were observed. These ecological conditions are referred to and categorized as RR condition 1 and RR condition 2." I cannot find a reference for the MBS Snoquerra Landscape Analysis. What kind of analysis was it (GIS, field verified, etc.)? When was it conducted, in what areas, and how extensive was the analysis?

The EA states that "Under CBM, best currently available site-specific data is paired with subsequent field validation surveys conducted before implementation to verify that conditions on site match those predicted during the project planning phase." How much site-specific data is available now and how much remains to be collected? The fact that only 44 of the total 352 stands planned for treatment, currently have stand exams, and that the remaining 308 stands are planned to be conducted before project implementation, that is not very encouraging about the reality of having the most up-to-date information to make accurate decisions in a project area that has so many sensitive and naturally unstable soil areas.

The EA states that "Project components analyzed with CBM include dispersed camping and Alternative 2 riparian reserve stream buffers. Appropriate treatments for each condition found in these areas have been determined. Using existing data, the IDT used these conditions and criteria to estimate the maximum treatments that could be implemented using condition-based management. While the IDT expects that some of these areas would not be treated because they may not meet the decision criteria, the maximum estimates of condition-based treatments were used to determine effects in the analysis for this project." This sounds like there is a significant amount of on the ground work that needs to be done before actual treatments can be determined.

Your 4/14/2023 response to my 5/21/2023 comments, and others

In discussing how buffer width would be determined you state that "Under condition based management, a fisheries specialist and hydrologist would be consulted on-the-ground as to which buffer would apply."

I submit that you are significantly underestimating how much need there will be for on-the-ground specialist consultation considering that there are potentially 308 stands, out of 352 stands considered for treatment, that have not been surveyed to this point.

7. Climate Change

As stated in the EA, "Across the project watershed, hydrology is especially vulnerable to climate change. Warmer winters will lead to increased flood events and the earlier onset of snowmelt. As frequency and severity of winter flood events grows, the threat of landslides and subsequent damage to roads and trails will make maintenance more difficult."

The scale of this project, 19,169 acres of thinning in 352 stands, and treating over 193 miles of roads (even with the proposed road maintenance work), combined with extensive areas of unstable soils and past timber and road management activities in the project area, added to the expected climate change impacts, will make aquatic habitat in these watersheds even more vulnerable. As stated previously, I am very concerned that with climate change increasing the risk damage to roads and existing naturally unstable soil areas, the proposed project thinning of over 19,169 acres and over 193 miles of road treatments, conducted over 15+ years, will add the existing resource problems in the project area.

In your 4/14/2023 response to my 5/21/2023 comments and others

Regarding climate change the EA now has more references and information on pages 28-30, however, my climate change impact concerns for the project area remain the same as previously stated.

8. Roads

The preferred alternative includes 63.3 miles of new temporary and temporary construction on existing roads. This is a significant amount of new road work disturbance, especially considering the overall sensitivity of these watersheds due to a combination of extensive natural instability (geology, soils, topography) as displayed in the new Soil Report Maps 2 & 3, and steepness of many of the channels, together with land management history, that has created unstable stream banks along the mainstem of upper NF Stillaguamish River, Deer Creek, Little Deer Creek, Higgins Creek, and major tributaries.

Decommissioning 12 miles (alternative 2) or 48 miles (alternative 3) sounds great, however, I am very concerned about how successful decommissioning would be considering the extent of natural instability and abundance of steep slopes in these subwatersheds. The cost per mile for road decommissioning can be as expensive as new road construction. Also, changing road maintenance levels on 175 miles of roads is ambitious, considering there has been little or no, road maintenance funding on the MBS NF for almost 10 years now. Storm proofing 194 miles and providing aquatic organism (fish) passage (culverts, bridges, etc.) on up to 30 sites is also ambitious. Where is the funding coming from to do all of this? With all the natural soil instability, decommissioning will not be 100% effective (will not bring back to historical conditions prior to road construction) and will require significant monitoring and road maintenance, due to the prevalence of naturally unstable soil areas in the watersheds.

The Transportation Report states that "These roads would be evaluated for treatments to mitigate resource damage while balancing tribal and user access needs." Suite of decom treatment options includes these or a combination (Blocked, CMPs removed, Recontoured, Unstable slope removed, Revegetated, Waterbarred/outsloped). Each road will be evaluated for the best fit treatment for a given road situation." These

evaluations need to be done prior to the EA. Where is the funding?

The EA states that temporary roads "would be closed and rehabilitated after management activities have been completed. For portions of this project area, up to 7 miles of temporary road would be constructed to a 'specified' standard. These roads would be placed on abandoned roads with limited adjustments to accommodate modern logging systems." Project activities could last at least 15 years, so how many times would these roads be closed and then opened again during this time period in order to conduct thinning activities? I am concerned about repeated impacts to downstream aquatic systems from conducting road-related work over the 15 years of the project, in these sensitive watersheds that have extensive areas of unstable soils prone to failures and landslides.

Road maintenance, reconstruction and storm proofing is proposed. This includes many different measures and activities that are costly. Considering that very little road maintenance has been conducted on the MBS NF for about 10 years, where will all the funding be coming from?

The EA states that "Roads were prioritized and targeted based on modeled impacts to streams where most indicators were rated high or very high." Where is this information displayed?

It is noteworthy that Lower Deer Creek and Segelsen-NF Stillaguamish R. subwatersheds have 3.25 and 3.14 mi/mi² open road densities which are considered "poor" and can impair watershed function. Again, I am concerned that over the proposed 15+ years of road construction activity (sedimentation impacts from roads being opened and closed) combined with the proposed thinning treatments in these subwatersheds with the project, could increase the risk of soil erosion and road-related failures.

The Fisheries Specialist Report states that "A portion of nearly 870 stream crossings would receive needed maintenance and replacement." The cost to do these is expensive and how will this be paid for considering that the MBSNF has not had basic funding to maintain existing roads for 10 years or more?

In your 4/14/2023 response to my 5/21/2023 comments and others

You state that "For road decommissioning, each action will work in cooperation with Natural Resources staff, would have an engineered task list and design methods for each road. This takes into consideration unique natural area features. Updates to the road maintenance levels reflect the SRS and were verified through the process of the EA to identify future management needs and include future stand improvements. Size and scope are ambitious and will take times as projects are completed. Funds may come from appropriations, grants or partnerships cooperation to accomplish."

As stated above, the "Size and scope are ambitious" indicating that there is still a lot of up front work that still needs to be done that does not appear to be funded.

Your 4/14/2023 response to my 5/21/2023 comments, and others

States "As each area is prepared (for a) timber sale, roads would be selected for each contract that may last about 4 to 6 years. As the USFS works through this project area over 15 to 20 years, temporary and M1 roads would be constructed or opened for each sale and decommissioned or closed upon completion. The number of temporary roads that are operational at any given time will fluctuate throughout the project."

Your 4/14/2023 response to my 5/21/2023 comments, and others

States "The timing of road maintenance and decommission would depend on funding availability and site conditions over the course of 15-20 years. Road conditions will almost certainly change over time; an evaluation performed this year is not likely to represent needs several years from now."

Again, there is a lot of uncertainty about the potential impacts of all of these timber sales and road-related activities over 15 to 20 years, since they won't be known until contracts are already made. How can you conduct a NEPA process on so many unknowns? It seems like the whole scale and time frame for this proposed project needs to be reduced.

9. Riparian Reserves Variable Density Thinning

The EA states that "Treatments would help attain Aquatic Conservation Strategy objectives." As pointed out previously, I have serious concerns about meeting ACS objectives when proposing to conduct variable density thinning at such a large scale (10,572 acres) being proposed due to the extreme sensitivity (glacial geology, extensive naturally occurring unstable soils, etc.) of the watersheds in the project area.

Condition-based management seems to be used in the EA for RR Condition 1 types of riparian areas to justify treatments inside of the RR in the name of improving habitat. This appears to be an attempt to cut corners by collecting less on the ground data, and extrapolate existing data, in order get around NEPA compliance by allowing proposed treatments to be aligned post treatment.

The EA states that "In unthinned or lightly thinned patches, a few individual trees, 18" to 24" in diameter, would be evaluated for potential manual felling into the channel to improve channel function in the short-term." Who would do the evaluation? The technically informed by a collaborative team mentioned on page 14? See my general comments above about my concerns with tree tipping or pushing without conducting pre-project planning and hydrologic modeling to determine potential benefits or risks.

The EA states on pages 17-18 that "Prior to project implementation, validation surveys would be conducted throughout all riparian reserves to determine the current condition (RRC1 or RRC2) and would assign the appropriate buffer width to each section (Table 12)." Who will be conducting these surveys throughout 352 stands proposed for treatment over an extensive area? It appears that all this work remains to be completed before project treatments begin. That is a huge undertaking and requires adequate staff and funding which the MBS NF does not currently have.

The Silviculture Analysis Report states that "Sample field verification of varying stream classification showed two common ecological relationships connected to vegetation function. These ecological conditions are referred to and categorized as Riparian Reserve (RR) condition 1 and RR condition 2."

When were these sample surveys conducted? Where are they summarized and how extensive were these surveys? By saying that "sample field verification" occurred does that mean that just a few sites were visited and then that information was extrapolated across the Riparian Reserves in the project area? This sounds like that elusive CBM. My concern is that due to combination of factors that make much of the project area high risk for soil, and bank erosion, that extrapolating data and then assuming that riparian areas are similar, creates a high risk of unforeseen problems that won't be apparent until the thinning units are laid out when it is too late to make changes and the project will no longer be viable.

In your 4/14/2023 response to my 5/21/2023 comments and others

You state "Site specific data will be collected for stands that are listed as moderate stability or unknown, prior to implementation of activities within those areas. Areas listed as low will not need data collected or a soils survey prior to implementation. Please refer to the updated soils report that now includes maps of known areas of instability and proposed stands."

In reviewing the new soils maps, the majority of potential stands (commercial & non-commercial) are located in "Moderately Stable" (several failures observed) (light orange) and there were few stands located within low risk areas. Thus, there is a lot of work remaining to collect data within the "Moderately Stable" (several failures observed) areas.

These new maps display further evidence of the significant amount of unstable soils in the proposed project area.

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