Oregon Board of Forestry – Virtual Public Special Meeting

Monday, May 16, 2022

The special meeting will be streamed live on the department's YouTube channel. There will be an opportunity for the public to provide live testimony during the meeting for item four. Written testimony may also be submitted leading up to the meeting day by email, to boardofforestry@odf.oregon.gov with the agenda item number included with the submission. Public comment will not be taken on work session (*) asterisked items.

Link to view Board of Forestry Meeting available at https://www.youtube.com/c/OregonDepartmentofForestry

Prior meetings' audio and this meeting's written material are available on the web at www.oregon.gov/odf/board.

Action and Information

7:00 – 7:10	**1.**	**State Forester and Board Chair Opening Comments** ..... Chair Kelly and State Forester Mukumoto
7:10 – 7:50	**2.**	***Final Orders: Spring Branch Creek Contested Case** Nick Hennemann, Greg Wagenblast, and Matt DeVore *The Department will present the Administrative Law Judge (ALJ) issued proposed order and record of exhibits, to issue a final order with any comments directing the State Forester on actions for the Statutory Written Plan and Plan for Alternate Practice associated with the Small Domestic Use stream. The Board to review and consider requests for awards of attorney fees/costs for the petitioners.* ***This is a decision item.***
7:50 – 7:55		Break
7:55 – 8:55	**3.**	***Executive Session**..... Chair Kelly *The Board will meet in executive session for the purpose of conferring with legal counsel regarding the consideration of information or records that are exempt by law from public inspection (ORS 192.660 (2)(f)).*
8:55 – 9:00		Break
9:00 – 9:50	**4.**	**Emergency Fire Funding Legislative Concept Decision** ..... State Forester Mukumoto and Bill Herber *The Department will present summary details of the legislative concepts proposed to address emergency fire costs. The Department will seek approval to move forward with the final development and submission of the proposed legislative concepts. The public can sign up to provide comments on this item.* ***This is a decision item.***
9:50 – 10:00	**5.**	**Board Closing Comments and Meeting Wrap Up** ..... Chair Kelly and Board Members *Board Chair and members to summarize the meeting's action items and provide closing comments.*

The times listed on the agenda are approximate. At the discretion of the chair, the time and order of agenda items—including the addition of a break—may change to maintain meeting flow. The board will hear public testimony [*excluding marked items] and engage in discussion before proceeding to the next item. * A single asterisk preceding the item number marks a work session, and public testimony/comment will not be accepted.

BOARD WORK PLANS: Board of Forestry (Board) Work Plans result from the board's identification of priority issues. Each item represents the commitment of time by the Board of Forestry and Department of Forestry staff that needs to be fully understood and appropriately planned. Board Work Plans form the basis for establishing Board of Forestry meeting agendas. The latest versions of these plans can be found on the Board's website at: https://www.oregon.gov/odf/Board/Pages/AboutBOF.aspx

PUBLIC TESTIMONY: The Board of Forestry places great value on information received from the public. The Board will only hold spoken public testimony at the meeting for decision items. The Board accepts written comments on all agenda items except consent agenda and Work Session items [see explanation below]. Those wishing to testify or present information to the Board are encouraged to:

- Provide written summaries of lengthy, detailed information.
- Remember that the value of your comments is in the substance, not length.
- For coordinated comments to the Board, endorse rather than repeat the testimony of others.
- To ensure the Board will have an opportunity to review and consider your testimony before the meeting, please send comments no later than 72 hours prior to the meeting date. If submitted after this window of time the testimony will be entered into the public record but may not be viewed by the Board until after the meeting.

Written comments for public testimony provide a valuable reference and may be submitted before the meeting for consideration by the Board. Please submit a copy to boardofforestry@odf.oregon.gov, and written comments received will be distributed to the Board. Oral or written comments may be summarized, audio-recorded, and filed as a record. Audio files and video links of the Board's meetings are posted within one week after the meeting at https://www.oregon.gov/odf/Board/Pages/BOFMeetings.aspx

The Board cannot accept comments on consent agenda items or a topic for which a public hearing or administrative law hearing has been held and the comment period has closed. If you wish to provide oral comments to the Board, you must email the Board Administrator to sign up for live testimony, contact, Megan.d.Frizzell@odf.oregon.gov, **by 5 p.m. Friday, May 13, 2022.** Instructions for providing public comment virtually will be confirmed by email and the link provided before the meeting.

Three minutes will be allotted for each individual to provide their comments. Those requesting additional time for testimony should contact the Board Support office at 503-945-7210 at least three days before the meeting. The maximum amount of time for all public testimony for agenda items with a Board decision will be thirty minutes.

WORK SESSIONS: Certain agenda topics may be marked with an asterisk indicating a "Work Session" item. Work Sessions provide the Board opportunity to receive information and/or make decisions after considering previous public comments and staff recommendations. No new public comment will be taken. However, the Board may choose to ask questions of the audience to clarify issues raised.

- During consideration of contested civil penalty cases, the Board will entertain oral argument only if Board members have questions relating to the information presented.
- Relating to the adoption of Oregon Administrative Rules: Under Oregon's Administrative Procedures Act, the Board can only consider those comments received by the established deadline as listed on the Notice of Rulemaking form. Additional input can only be accepted if the comment period is formally extended (ORS 183.335).

GENERAL INFORMATION: For regularly scheduled meetings, the Board's agenda is posted on the web at www.oregonforestry.gov two weeks prior to the meeting date. During that time, circumstances may dictate a revision to the agenda, either in the sequence of items to be addressed or in the time of day the item is to be presented. The Board will make every attempt to follow its published schedule and requests your indulgence when that is not possible.

To provide the broadest range of services, lead-time is needed to make the necessary arrangements. If special materials, services, or assistance is required, such as a sign language interpreter, assistive listening device, or large print material, please contact our Public Affairs Office at least three working days before the meeting via telephone at 503-945-7200 or fax at 503-945-7212.

Use of all tobacco products in state-owned buildings and on adjacent grounds is prohibited.

State Forester and Board Chair Opening Comments

Agenda Item No.:	2
Work Plan:	Forest Resources Division
Topic:	Final Order
Presentation Title:	Final Order NOAP 2022-531-01917 State Forester Comments Hearing request by George Kral
Date of Presentation:	May 16, 2022
Contact Information:	Greg Wagenblast, Civil Penalties Administrator, Forest Resources Division 503-945-7382, greg.wagenblast@odf.oregon.gov Nick Hennemann, Interim Deputy Division Chief, Forest Resources Division, nick.hennemann@odf.oregon.gov

SUMMARY

This agenda item is to consider the hearing record for a hearing request on comments of the State Forester associated with a Statutory Written Plan and Plan for Alternate Practice involving Notification of Operation Number 2022-531-01917 by landowner Stimson Lumber Company with operator Bighorn Logging Corp., and to decide on the final order regarding the matter.

CONTEXT

The *Forestry Program for Oregon*'s Goal A recognizes the importance of promoting a sound and effective legal system and ensuring that Oregon's forests continue to provide a diverse suite of social and economic outputs and benefits (Goal B). Goal D recognizes soil and water are basic elements of forest productivity. The interaction of soil and water plays an important role in the health of the streams and rivers flowing through Oregon's forests. Clean water is critical to our quality of life.

SUMMARY OF THE CASE

Beginning in the fall of 2021, Stimson Lumber Co. ("Stimson") began discussions with the department regarding a timber operation in Washington County planned for 2022, named the "NORDGREN HL" operation. The operation included a "clearcut / overstory removal" of three units, totaling approximately 59 acres. Oregon Department of Forestry provided technical assistance to Stimson through, in part, ODF Stewardship Forester Eric Jacobs and ODF Geotechnical Specialist Mike Buren. Mr. Buren reviewed the planned operation under the parameters of OAR 629-623. This review was memorialized in emails on January 5, 2022, and March 4, 2022. Stimson filed a NOAP for the harvest operation on January 26, 2022. Stimson also filed a non-statutory written plan (dated 1/25/22) to address the January geotechnical report and high landslide hazard locations (HLHL).

At the time of the initial NOAP, ODF believed that the streams within the operation area were non-fish bearing and non-domestic use streams. Therefore, ODF advised Stimson that a statutory written plan was not required. Through subsequent discussions and investigations, ODF determined that one of the streams in the harvest unit was used for domestic water purposes and should be classified as a domestic water use stream (Type-D) and would require a written plan pursuant to ORS 527.670(3). When this classification was changed, Stimson had already begun felling some trees in the riparian management area of the Type-D stream.

Upon notification of the stream designation, Stimson stopped operations in the designated riparian zones and submitted a statutory written plan required by ORS 527.670(3) for an operation within 100 feet of a Type-D stream, and a plan for alternate practice (PFAP) proposed as part of the written plan for the Type-D stream (dated 2/24/2022). Stimson's plan was uploaded into the ODF E-notification system ("FERNS") on March 2, 2022, and thereafter available for public review and comment. On March 16, 2022, George Kral submitted two comments on Stimson's February 24th statutory written plan and PFAP. Also on March 16th, the adjacent landowner Larry Lund submitted comments on the written plan and PFAP. On March 23, Stewardship Forester Eric Jacobs, as the designee of the State Forester, submitted comments on Stimson's written plan and PFAP. Mr. Kral's hearing request was then filed on April 1, 2022.

Administrative Law Judge (ALJ) Triana held a hearing on April 15, 2022, which was then continued a second day on April 21, 2022, by video conference. George Kral represented himself as the Respondent at hearing. Ken Elbert, PE with expired license and George Kral testified on behalf of George Kral. Assistant Attorney General (AAG) Matthew DeVore represented the Department. Greg Wagenblast appeared on behalf of the Department. Eric Jacobs, department Stewardship Forester; Mike Buren, department Geo-Tech; Keith Baldwin, department Forest Practices Field Coordinator, testified on behalf of the department. Additional parties to the agency's case included Stimson Lumber Company represented by Scott Gray and Bighorn Logging Corporation represented by attorney Matthew F. Denley. The record closed at the conclusion of the April 21, 2022, hearing.

ALJ Triana made the following Conclusion of Law:

1. The Board of Forestry should affirm the comments of the State Forester (issued through Stewardship Forester Eric Jacobs on March 23, 2022) in response to the Statutory Written Plan and the Plan for Alternate Practice (prepared by Stimson Lumber Company and dated February 24, 2022), which were prepared pursuant to ORS 527.670(3)(a) for an operation that occurs within 100 feet of a stream determined by the State Forester to be used by fish or for domestic use.

2. Neither Appellant nor Bighorn Logging Corporation are entitled to attorney's fees and costs associated with this contested case hearing.

ALJ Triana's proposed order was served on April 28, 2022. It proposed that the comments of the State Forester (issued through Stewardship Forester Eric Jacobs on March 23, 2022) in response to the Statutory Written Plan and the Plan for Alternate Practice (prepared by Stimson Lumber Company and dated February 24, 2022), which were prepared pursuant to ORS 527.670(3)(a) for an operation that occurs within 100 feet of a stream determined by the State Forester to be used by fish or for domestic use should be AFFIRMED.

ALJ Triana also proposed that the appellant's request for attorney's fees and costs associated with this contested case hearing should be DENIED. Bighorn Logging Corporation's request for attorney's fees and costs associated with this contested case hearing should be DENIED.

The Proposed Order issued by ALJ Triana allowed for parties to file exceptions within seven days of the proposed order. Mr. Kral filed exceptions (Attachment 2) within this time frame, pointing to four specific objections with the proposed order. The record of the hearing and exhibits and exceptions have been provided to the Board members for review.

ALTERNATIVES CONSIDERED

There are two primary decisions for the Board:

1. After reviewing and considering the proposed order, record, and exceptions if applicable, the board may do any of the following:

    a. Affirm the comments of the State Forester
        i. Statutory Written Plan
        ii. Plan for Alternate Practice

    b. Modify the comments of the State Forester
        i. Statutory Written Plan
        ii. Plan for Alternate Practice

    c. Rescind the comments of the State Forester
        i. Statutory Written Plan
        ii. Plan for Alternate Practice

2. After reviewing and considering the record and final order issued, the Board may award attorney fees/costs:

    Requests have been made by Mr. Kral and Bighorn Logging for this award per

    - *ORS 527.700(9) If the board rescinds or modifies the comments on the written plan as submitted by the State Forester pertaining to any operation, the board may award reasonable attorney fees and costs against the state in favor of each of the prevailing parties.*
    - *ORS 527.700(7) The board may award reasonable attorney fees and expenses to each of the prevailing parties against any other party who the board finds presented a position without probable cause to believe the position was well-founded or made a request primarily for a purpose other than to secure appropriate action by the board.*

    a. Award Mr. Kral attorney fees/costs
    b. Deny Mr. Kral attorney fees/costs
    c. Award Bighorn Logging attorney fees/costs
    d. Deny Bighorn Logging attorney fees/costs

RECOMMENDATIONS

The Department recommends that the Board issue a Final Order that is consistent with the ALJ's proposed order, which reaches alternatives 1(a)(i) and 1(a)(ii), and a denial of attorney's fees and costs. The draft Final Order that is included as Attachment 3 for the Board's consideration includes:

1) Find that the exceptions filed by Mr. Kral were timely and considered but determined that none of the exceptions justify modification of the proposed order.
2) Adopts the recommendation of the ALJ's proposed order that:
    a) Affirms the state foresters' comments on the statutory written plan and the plan for alternate practice.
    b) Denies the request for attorney fees and costs for Mr. Kral and Bighorn Logging.

ATTACHMENTS

(1) ALJ Proposed Order for OAH Case No 2022-ABC-05271/ODF Case No. NOAP 2022-531-01917 Comments of the State Forester on Stat WP and PFAP
(2) Exceptions for George Kral Hearing on Comments of the State Forester for Statutory Written Plan and Plan for Alternate Practice associated with NOAP 2022-531-01917
(3) Draft Final Order for OAH Case No 2022-ABC-05271/ODF Case No. NOAP 2022-531-01917 Comments of the State Forester on Stat WP and PFAP
(4) Agency Exhibit Documents for OAH Case No 2022-ABC-05271/ODF Case No. NOAP 2022-531-01917 Comments of the State Forester on Stat WP and PFAP
(5) Mr. Kral's Exhibit Documents for OAH Case No 2022-ABC-05271/ODF Case No. NOAP 2022-531-01917 Comments of the State Forester on Stat WP and PFAP
(6) Hearing recording OAH Ref No. 2022-ABC-05271 April 15 morning session
(7) Hearing recording OAH Ref No. 2022-ABC-05271 April 15 afternoon session
(8) Hearing recording OAH Ref No. 2022-ABC-05271 April 21 morning session
(9) Hearing recording OAH Ref No. 2022-ABC-05271 April 21 afternoon session

BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS
STATE OF OREGON
for the
OREGON DEPARTMENT OF FORESTRY
PRIVATE FORESTS

IN THE MATTER OF:	)	**PROPOSED ORDER**
	)	
GEORGE KRAL	)	OAH Case No. 2022-ABC-05271
	)	Agency Case No. NOAP 2022-531-01917

HISTORY OF THE CASE

On February 24, 2022, Stimson Lumber Company (Stimson) submitted a Statutory Written Plan and a Plan for Alternative Practice (PFAP) to the Oregon Department of Forestry, Private Forests (the Department) for harvest opersations on the Nordgren HL. On March 23, 2022, the Department made formal comments on Stimson's Written Plan and PFAP. On April 1, 2022, George Kral (Appellant) requested a hearing on the Department's comments.

The Department determined that Appellant met the requirements of ORS 527.700(5), and referred his hearing request to the Office of Administrative Hearings (OAH) on April 5, 2022. The Department determined the parties to the hearing would include Appellant, Stimson (the landowner), Bighorn Logging Corporation (the operator), and the Department.

The OAH assigned Senior Administrative Law Judge (ALJ) Kate Triana to preside at hearing. ALJ Triana convened a telephone prehearing conference on April 11, 2022. Appellant represented himself. Assistant Attorney General (AAG) Matthew DeVore represented the Department. Greg Wagenblast also appeared on behalf of the Department. Attorney Matthew Denley and Denise Dethlefs appeared on behalf of Bighorn Logging. Scott Gray, Mike McKibbin, Tim Shiel, and Samuel Howard appeared on behalf of Stimson. ALJ Triana scheduled a two-day hearing for April 15, 2022 and April 21, 2022, via video conference.

A hearing was held on April 15, 2022 and April 21, 2022, via WebEx video conference. Appellant appeared without counsel and testified at the hearing. Kenneth Elbert (Professional Engineer) testified as a witness for Appellant. AAG DeVore represented the Department. Mr. Wagenblast also appeared on behalf of the Department. Eric Jacobs (Department Stewardship Forester), Mike Buren (Department Geotechnical Specialist) and Keith Baldwin (Department Field Coordinator) testified as witnesses for the Department. Mr. Gray represented Stimson. Mr. McKibbin, Mr. Shiel, and Mr. Howard also appeared on behalf of Stimson. Mr. Denley represented Bighorn Logging. Ms. Dethlefs, Harve Dethlefs, and Mark Stanley Jr. also appeared on behalf of Bighorn Logging. Mr. Jacobs and Mr. Buren testified on the first day of the hearing. Mr. Buren, Mr. Baldwin, Mr. Elbert, and Appellant testified on the second day of the hearing.

In his pre-hearing memo, Appellant requested reimbursement for legal and professional consulting expenses. *See* Ex. R0 at 6. At the start of the hearing, Bighorn Logging made an oral request for attorney fees pursuant to OAR 629-672-0310.

The hearing record closed at the conclusion of the April 21, 2022 hearing.

ISSUES

1. Whether the Board of Forestry should affirm, modify or rescind the comments of the State Forester (issued through Stewardship Forester Eric Jacobs on March 23, 2022) in response to the Statutory Written Plan and the Plan For Alternate Practice (prepared by Stimson Lumber Company and dated February 24, 2022), which were prepared pursuant to ORS 527.670(3)(a) for an operation that occurs within 100 feet of a stream determined by the State Forester to be used by fish or for domestic use.

2. Whether Appellant or Bighorn Logging Corporation is entitled to attorney's fees and costs associated with this contested case hearing. ORS 527.700(7); OAR 629-672-0310.

EVIDENTIARY RULINGS

Exhibits A1 through A43, offered by the Department were admitted into the record without objection. Exhibits R0, R1A, R1B, R2, and R3, offered by Appellant, were admitted into the record without objection.[1] Exhibits R4,[2] R5, and R6, offered by Appellant on the second day of hearing, were conditionally admitted into the record over the objections of the Department and Bighorn Logging that they were not submitted timely, not relevant, and that Exhibit R4 had been modified. Exhibits R4, R5, and R6 are admitted into the record over the Department and Bighorn Logging's objections.

FINDINGS OF FACT

1. Stimson owns a parcel of land, referred to as Nordgren HL, located at Township 1 North, Range 4 West, Sections 28 and 29, in Washington County, Oregon. (Ex. A9 at 1-2.)

2. Spring Branch stream and its tributaries run down Gales Peak, through the Nordgren HL, and into the valley below. At the mouth of one canyon, Spring Branch runs by a residential home (the Lund Residence) and by Appellant's farm. (Test. of Appellant; Exs. A6 at 1, R5 at 1, 4.) The Lund Residence draws its drinking water from Spring Branch stream. The Lunds have a valid water use permit to draw water from the stream. (Ex. A24 at 1.)

3. On November 10, 2021, a representative for Stimson contacted Stewardship Forester Jacobs to request a site visit for Nordgren HL, as Stimson was planning to harvest timber located from various spots around the site. (Test. of Jacobs; Ex. A9 at 1-2.) During the site visit, Stewardship Forester Jacobs determined that he needed to consult with a Department geotechnical expert due to steep slopes on the site and dwellings downslope of the harvest area. (Test. of Jacobs.)

4. On January 3, 2022, Stewardship Forester Jacobs and Mr. Buren, Department Geotechnical Specialist, performed a pre-harvest inspection of the Nordgren HL operation. (Test. of Jacobs; Ex. A2 at 1.) The inspection was to review high landslide hazard location (HLHL)

[1] The Department and Bighorn Logging noted that some of the exhibits offered by Mr. Kral were duplicative to those offered by the Department. For expediency, both sets of exhibits were admitted into the record.

[2] Appellant submitted Exhibit R4 and later submitted a modified Exhibit R4. At the hearing, Appellant offered only the modified Exhibit R4. All references to Exhibit R4 are to the modified version.

areas and to assess risk(s) to public safety posed by the operation. (*Id.*) Mr. Buren also conducted a "desktop review" of the site by looking at various maps and documentation regarding the site, including Lidar images. (Test. of Buren.)

5. On January 5, 2022, Mr. Buren wrote an email to Stewardship Forester Jacobs with the conclusions from his "Division 623 Review." (Ex. A4 at 1.) He divided the Nordgren HL parcel into five areas (A through E) for reference. (Exs. A4 at 1, A6 at 1.) He determined that no harvest modifications would be required for Areas B and D, but that Areas A, C, and E required some modifications. (Ex. A4 at 1-2.) He determined that Area D, which encompassed the Lund residence with outbuildings, was in a HLHL with Exposure Categories of "A" and "C," had structures/roads within the Further Review Area, an Impact Rating of "unlikely," and a Downslope Public Safety Risk Level (PSRL) of "low." (*Id.* at 1.) He attached a map that showed the HLHL areas. (*Id.* at 2.) Finally, he determined that a written plan would be required for the unit. (*Id.* at 3.)

6. In its records, the Department had Spring Branch stream incorrectly classified as a Type N stream (not fish bearing or domestic use). The domestic water use by the Lund Residence was incorrectly noted as being in a different drainage area. (Test. of Jacobs; Exs. A10 at 2, A14 at 1.) The Oregon Water Resources Department (OWRD) supplied the information to the Department regarding the water right. (Test. of Jacobs.)

7. Stimson submitted a Non-Statutory Written Plan for the Nordgren HL to the Department, dated January 25, 2022, due to "HLHL's that will need protection to minimize potential downslope hazards." (Ex. A9 at 1.) The Written Plan noted that Area D had a Downslope PSRL rating of low and the area would be "cable logged as normal." (*Id.*) It also indicated that a pre-harvest meeting with the operator (Bighorn Logging) would take place to "review the technical details of this harvest unit." (*Id.*)

8. On January 25, 2022, Stewardship Forester Jacobs conducted a pre-operation inspection of the Nordgren HL. (Ex. A8 at 1.) He reviewed the operational plan and required harvest modifications for public safety requirements, and found no areas of concern. He noted that wind buffers and modified harvest areas had been flagged. (*Id.*)

9. On January 26, 2022, Stimson submitted a Notification of Operations/Permit to Operate Power-Driven Machinery (NOAP) to the Department regarding Stimson's intent to harvest timber on the Nordgren HL. (Ex. A10 at 1.) Stimson indicated that there were streams within the area and that the area had HLHL with the slope of the steepest third being 80-percent. (*Id.* at 2.)

10. On February 4, 2022, Stewardship Forester Jacobs, on behalf of the Department, provided the following formal comment to Stimson regarding the January 2022 NOAP:

> Resource review complete: all streams are small type N - no additional protected recourse [*sic*] concerns identified at this time. The Written Plan submitted with this NOAP is not a statutory written plan requirement and therefore does not require a 14-day public comment period. Written Plan has been reviewed. Ensure that public safety requirements for high landslide areas are followed. Do not operate ground-based machinery on any HLHL slopes or on slopes that are greater than 60% and that are within areas having Public Safety Risk Level (PSRL) of intermediate or substantial. As requested, a

> waiver of the 15-day waiting period is granted for activities to begin in 'Area D' shown on the attached map which has received a PSRL rating of low. Activities in the remaining areas (those other than 'Area D') may begin after the end of the waiting period on 02/11/2022.

(Ex. A10 at 2.)

11. On February 15, 2022, Appellant contacted the Department to inquire about a logging operation at the Nordgren HL. He told a Department representative that he thought logging that unit was a "bad idea," due to the slope steepness, recent history of slides in that area, and the domestic water use of the Spring Branch stream by a neighbor. (Ex. A30 at 6.) The Department notified Appellant that the domestic water right was not in the stream where the logging was occurring. (*Id.*)

12. On February 18, 2022, Stewardship Forester Jacobs met with Appellant and Mr. Lund and performed an inspection of the Nordgren HL. (Test. of Jacobs; Ex. A11 at 1.) He took a picture of trees that had been felled into the Area D stream. (Ex. A12 at 2.) He noted that Stimson was "in compliance" at the time of the inspection. (Ex. A11 at 1.) He also investigated where the water source for the Lund Residence was located. (Test. of Jacobs.)

13. On or shortly after February 18, 2022, the Department notified Stimson that the Spring Branch stream in Nordgren HL was a Type D stream, not a Type N stream as previously disclosed. (Test. of Jacobs.) At that time, Stimson stopped logging along the riparian management area (RMA) of the stream. (Ex. A14 at 3.) However, trees along approximately 800 feet of the RMA of the stream had already been felled, and were in and around the RMA and stream. (*Id.*)

14. On February 23, 2022, Stewardship Forester Jacobs performed an inspection of the Nordgren HL after receiving a notice of concern that logging operations may be taking place within the type D stream located in Area D. He noted that felling operations were occurring in the drainage system to the south, but not within the type D drainage area. (Ex. A13 at 1.)

15. On February 24, 2022, Stimson submitted a Statutory Written Plan and Plan for Alternative Practice (PFAP) to the Department, based upon the reclassification of the Spring Branch stream in the Nordgren HL from type N to type D. (Ex. A14 at 1.) It identified as a protected resource, among others, "Stream 1," a small, type D stream approximately 1,770 feet in length with an RMA of 20 feet. (*Id.*) The Statutory Written Plan provided, in part:

> The main stream (Stream 1) was originally classified as small type N. ODF FERNS has the intake for the domestic water located on a different drainage, approximately 500 feet to the north. Once this was brought to our attention, we stopped cutting operations within this drainage. Then designated the remaining live water within this drainage as small type D, updating our GIS.
>
> The buffer of these streams will meet or exceed the 20 foot rule requirement, with the actual buffer ranging from 20 feet up to 90 feet in some areas. This was done to improve protection of the resource from felling and logging operations. Additionally, standing timber, approximately 3.8 acres, along the northern side of the main stem will be left to minimize potential disturbance of the small type D and its related 20 foot RMS. It was Stimson's opinion that

the removal of the trees in this area could have resulted in unacceptable amounts of damage within the RMA and potentially increase soil disturbance.

(*Id.*) The PFAP, attached to the Statutory Written Plan, provided, in part:

> The main stream, Spring Branch, was originally classified as a small type N. ODF FERNS has the intake for the domestic water located in a different drainage, approximately 500 feet to the north. Once this was brought to our attention, we stopped cutting operations within this drainage. Then designated the remaining live water within this drainage as small type D, updating our GIS.
>
> The buffer of these streams will meet or exceed the 20 foot rule requirement, with the actual buffer ranging from 20 feet up to 90 feet in some areas. This was done to improve protection of the resource from felling and logging operations. Additionally, standing timber, approximately 3.8 acres, along the northern side of the main stem will be left to minimize potential disturbance of the small type D and its related 20 foot RMA. It was Stimson's opinion that the removal of the trees in this area could have resulted in unacceptable amounts of damage to the tress within the RMA and potentially increased soil disturbance.
>
> The total additional RMA will be approximately 1,140 linear feet and with a width ranging from 20 to 90 feet, on three of the tributaries to the main channel of the estimated 800 linear feet of impacted Type D stream.
>
> Removal of the felled trees will increase the restoration of the stream RMS through tree planting.
>
> * * * * *
>
> On stream 1, harvesting will begin outside the RMA. The south side will be logged up to the edge of the small type D, approximately 20 feet. Then the north side will be logged with the logs being yarded over the fell and buck within the 20 feet RMA. Once the logging is completed outside the RMA, the fell and buck will be removed from the RMA and stream channel. During this part of the operation, on each skyline corridor, the RMA and stream will be clearing of logging debris. A final clean-up will take place after logging of the RMA and stream channel.
>
> Stream #2 will be logged in the same manner.
>
> Exposed soil within all RMA's [*sic*]that may deliver sediment will be seeded and mulched to help restore vegetation within the RMA. Skyline corridors that have gouging and may deliver sediment into stream will be water barred by hand and seeded. Reforestation will take place as soon as possible to restore vegetation to the area.

(*Id.* at 3.)

16. On February 28, 2022, Mr. Buren began a second review of the Nordgren HL in the drainage area above the Lund residence. (Test. of Buren; Ex. A19 at 1.) Appellant and neighbors had reported to the Department that an event approximately 20 years earlier had "delivered debris" to the residence. (Ex. 19 at 1.) Mr. Buren reviewed historical aerial photographs of the area to determine the public safety risk level to the Lund residence. (Test. of Buren.)

17. On March 1, 2022, Stewardship Forester Jacobs performed an inspection of the Nordgren HL and determined that all felling operations were in compliance at that time. He noted that streamside buffers had been flagged on the main stream and all tributaries. (Ex. A20 at 1.)

18. On March 2, 2022, Stewardship Forester Jacobs and Mr. Buren visited the Nordgren HL, toured the Lund Residence and part of the site upstream from the Lund Residence, and discussed historical flood events with concerned residents (including Appellant, Lund, and other neighbors). (Test. of Buren; Ex. A21 at 1.) Mr. Buren determined that he needed to complete a further review of the area to determine the public safety risk level to the Lund residence. (Exs. A21 at 1, A22 at 1.)

19. Also On March 2, 2022, Stewardship Forester Jacobs, on behalf of the Department, provided the following formal comment to Stimson regarding the January 2022 NOAP:

> A Statutory Written Plan is required for any operational activity that will directly affect the RMA of the Type D stream. A statutory written plan and a plan for alternate practice was received and placed in the documents section of this NOAP. Stewardship Forester comments may be provided following the 14-day open comment period.

(Ex. A10 at 2.)

20. On March 4, 2022, Mr. Buren wrote an email to Stewardship Forester Jacobs, summarizing his findings of the review of the drainage upstream from the Lund residence. (Ex. A22.)

> In my evaluation of Jan. 5th, I had recognized various slope stability features in the area, but I did not have direct knowledge of the events the neighbors related. I had designated the Lund residence as having a "Low" downslope public safety risk. Various risk levels require different administration of the upland harvest and I wanted to understand the events fully in case revision of the risk level was warranted.
>
> History Related by Neighbors and Observations from the Walk and Orthophotos[.]
> Two important events occurred near the Lund residence. The earliest was in 1996 and another in 2007.
>
> > 1) In 1996 a debris torrent came down drainage "D." This is the main drainage out of the north part of the harvest unit * * *. On our walk, we noted the area where the stand age was reset in the depositional area evidenced by younger alder. The downslope edge of the young alder stand

is about 300 feet above the home. Just above that point is where part of the debris split and followed two paths toward the Lund residence along two separate, shallow, ill-defined drainageways. In the area of the split drainage and below the area of stand reset, large trees remain in the buffer formerly left by harvest in the 80s. These two drainage-ways are shallow, about 3 feet deep, as they make their way past either side of the home.

Perhaps concurrently with the deposition of most of the debris upslope, some forward momentum continued to deliver debris down these two little drainage-ways. Alternatively, shortly after the debris torrent came to rest, the stream reworked and redistributed a portion of the debris toward the home. Mr. Lund said mud and small sticks were deposited to the E and W of his home by overflowing the two drainage-ways by about 12 inches. The drive was covered and the stream-side edge of the hot tub deck posts were buried. No large woody debris was transported to the home.

2) The event of 2007 came out of the much smaller drainage directly N of the first event. This unit was harvested in winter of 2002-2003 and is outside the present unit in discussion, but its behavior may be relevant to predicting impacts to the home. The deposit looks to be up to three feet thick in the main depositional area. The downslope edge of that area is about 100ft from the garage. As in the 1996 event, a portion of debris continued on from me main depositional area, following the slope down and through the small barn on the W edge of the drive to a depth of 8 to 12 inches. This pathway is separate from the other two mentioned in #1 above.

Discussion

Obviously the area is subject to slide activity as mentioned above. Other events were mentioned by neighbors to the southeast along the hill-front. Also, review of the terrain shows very large fan like features below many of the drainages in the area. The one where the Lund residence is located contains scattered boulders below, near and upslope of the home. These are evidence of slide deposition, rather than of alluvial origin. While in the drainage, I noted large boulders in/on this feature. This fan has old growth stumps, which would put its deposition likely no later than about 400 years ago. It looks to be a debris field from some type of deep[-]seated, mega failure of the uplands. These features are discernable in many areas in the Coast Range and their foothills, between hill-fronts and valley bottoms and are poorly understood by geologists in their mechanism of failure and timing. They are however not of the variety of landslide that the public safety rules were developed upon. Those rules relate to “shallow rapidly moving landslides,” generally initiated to depths comparable to the rooting depth of trees. Shallow, rapidly moving landslides can be initiated by forest practices [629-623-0000(1)] - thus the rule-set and the reason for my part in this. Slides also initiate in forested terrain not affected by forest practices, therefor[e] structures located below steep drainages often have safety risk regardless of upland land use.

My visit to the area surrounding the Lund residence has not changed my evaluation of January 5th. In the context of the rule-set, the risk to public safety is "Low" at the Lund residence. The neighbors may wonder why if there is evidence of slide activity and sediment delivery, is my determination unchanged? The rules focus the analysis on serious bodily injury or death, not simply if a slide can occur or if there is chance of sediment delivery. In the introduction to the rules it states, 629-623-0000 (3):
The purpose of the shallow, rapidly moving landslides and public safety rules is to reduce the risk of serious bodily injury or death caused by shallow, rapidly moving landslides directly related to forest practices ....

The reasons for my conclusion include:

1) The bulk of both events (2007 and 1996) terminated where they are expected to terminate, proximal to the loss of confinement, at the mouth of the gullies. The downslope edge of the bulk of material is still about 100 ft and 300 ft from the home, respectively. The home is about 550 ft from loss of confinement at both canyon mouths (to be clear, only the 1996 event originated from the unit in question while the 2007 event originated from a harvest area conducted in the winter of 2002-03).

2) The possible movement of a portion of material in the shallow drainage-ways does not carry the energy to transport trees/large wood (which can be very destructive), or to have the force needed to avulse its channel and seriously impact the home.

3) There are over 300 ft of large trees in the buffer below the unit that can slow and stop the movement of potential debris to the home.

4) From expected loss of confinement, the terrain is open and about 15% average slope. The drainageways are too shallow to provide adequate confinement to transport much debris.

(Ex. A22 at 1-2; emphasis in original.)

21. On March 16, 2022, Jack Constans, Watermaster for District 18 of OWRD, notified Stewardship Forester Jacobs that OWRD's opinion regarding the location of the Lund domestic water right had changed based on further research. (Ex. A26 at 2-3.) Mr. Constans attributed the original error to several factors, including the age of the permit maps (nearly 100 years old), the scale of the permit map being off, a new house being built on the property in a different location than noted on the original permit, and documentation regarding the location of the water right citing the incorrect location. (*Id.* at 1, 4, 5.) On March 23, 2022, Mr. Constans opined that the Lund's domestic water right was located on Spring Branch, not northwest of the actual location as originally determined. (*Id.* at 1.)

22. On March 16, 2022, Appellant authored a public comment on FERNS (the Department's online portal for publishing and receiving comments related to forestry operations), regarding Stimson's Statutory Written Plan and PFAP that read, "[t]he new plan is not adequate to address water quality and slope stability concerns for many reasons. I am sending detailed comments in an email to Stimson and ODF." (Ex. A23 at 1.) Appellant's email to the

Department provided:

> Nordgren HL is a logging unit in Spring Branch Canton on Gales Peak, which lies to the west of our farm. The unit encompasses the steepest and most unstable ground on the peak, with a history of generating slides that have affected downslope properties, including ours, according to mapping by the Oregon Department of Geology and recent neighborhood history. A review of facts relevant to the resources in this written plan:
>
> 1. In 2002, Spring Branch was designated a class D stream, presumably by ODF, as indicated on a previous Weyerhaeuser logging plan. Both ODF and Stimson were aware, or should have been aware, of this water right prior to the inception of the current operation;
>
> 2. When notified, ODF refused to believe that the water right existed in this location and permitted Stimson to continue logging for four days without any modifications;
>
> 3. By the time ODF finally asked Stimson to halt felling, approximately 6 acres at the bottom of the canyon had already been felled, exposing hundreds of feet of the stream with extremely steep, fragile banks;
>
> 4. No buffer at all was left on this Class D stream as required by the FPA;
>
> 5. No written plan was prepared as required by the FPA;
>
> 6. A written plan submitted on 2 March 2022, after logging was well underway, fails to address damage already done to the stream;
>
> 7. Buffers proposed in the revised plan do not mitigate, and may exacerbate, extreme instability of slopes above protected streams. For example, a similar stream buffer in a recent ODF clearcut 45.634ºN-123.565ºW blew out during a minor rain event, resulting in a 2-acre debris fan that covered a road and temporarily blocked a tributary of the Wilson River;
>
> 8. Basins of similar or less extreme steepness (Rock Creek 1996, Dodson 1996, Woodson 2007), are known by ODF to have produced debris flows of a nature that, in Spring Branch, would disrupt domestic water use and threaten downslope lives and properties;
>
> 9. OAR 629-623-0000 through 629-623-0800 provide protections for life and property from logging-associated landslides through risk analysis;
>
> 10. ODF's landslide risk analysis, which ODF re-opened in response to the type D stream designation, lacks critical information about recent historic slides and debris flows in the vicinity of the logging unit that should have been considered when assigning risk categories to downstream properties;

11. The Oregon Department of Geology identifies multiple large, geologically recent debris fans at the base of this logging unit extending far beyond houses;

12. In a phone conference 21 February 2002, the ODF geotech Mike Buren acknowledged that he designated Spring Branch Canyon a low risk without physically viewing it, and that he had no information on recent slides form any part of the unit or surrounding areas – information critical to the analysis. Buren was also unaware of the domestic use of the stream;

13. Spring branch and other streams in the unit have produced recent slides. Stimson Lumber and the previous owner were aware of at least some of these slides as they have repaired damage they caused to roads and property;

14. When Buren ultimately visited the site, along with neighbors Alan Bonebrake, Larry Lund and myself as well as Stimson and ODF staff, Buren measured the 1996 debris blow extending 450 feet beyond the canyon mouth, threatening both the Lund home and its water system. This debris flow occurred in 1996, when the entire basin was thickly covered in timber, prior to any recent logging;

15. During this meeting, neighbors recounted other recent and historic slides, including information on a slide after the mountain was logged that covered acres of a field in the valley, rendering it unfarmable;

16. In peer-reviewed studies (Amaranthus 1985, Ketcheson 1978, Lancaster 2003, May 2007, Baum 2011, Goetz 2014), logging in western Oregon has consistently been linked to increased frequency and size of landslides and debris flows. Despite new information on slides, and the likelihood that logging would increase size of debris flows on Spring Branch, ODF has declined to make any revisions to its geotechnical analysis of this logging unit, allowing continued logging of unstable slopes that threaten protected resources;

17. Despite overwhelming scientific evidence, ODF staff, including Mike Cafferata (Forest Grove) and Steve Truesdell (Roseburg) have minimized the role of logging in accelerating rates and severity of landslides, and both [of] these staff members have chosen to place fault on citizens whose houses lie at the foot of mountain slopes. * * * ;

18. None of the downslope property owners was [*sic*] contacted by ODF or Stimson to inform them of the risks being taken to their detriment, to get their permission for analyzing their properties or to ask them for information, including the domestic waster use of Spring Branch, that would have been critical to even a cursory resource analysis;

19. The FERNS public notification system failed to facilitate critical communications about the protection of lives, properties and water resources with affected landowners, some of whom are elderly and all of

whom live in remote rural areas.

> We have presented information that, again, ODF and Stimson knew or should have known about both water rights and slope stability concerns. These failures and omissions by ODF and Stimson provide ample reason for the State Forester to require Stimson to halt activities in order to provide sufficient time for review and necessary logging unit revision. The written plan submitted on March 2 is deficient and Stimson should be required to re-submit a plan that takes account of the above mentioned factors and sufficiently addresses loggings impact on Spring Branch, a Type D stream.

(*Id.* at 3-4.)

23. Also on March 16, 2022, Larry Lund provided the following formal comment to the Department:

> I have continued to struggle with FERNS. I spent over an hour at George Kral's house trying to submit my comments to FERNS with no luck. I am left with no choice other than emailing my comments to you so that they can be timely made a part of the record. Thanks for walking me through it but when it came time to submit, it would not accept it.
>
> My family home and our water source come from Spring Branch. Our water right is 100 years old and is confirmed by the Water Master. Quality of water in our creek is important to us. I am concerned that Stimson started logging the bottom of the draw above our property and now there are no trees on a large section of the stream. I am also concerned that continued logging upstream from this point will cause more damage to the stream and contribute to landslides that could harm my water and family. We met with the geotech to provide history of slides and concerns for water and property. ODF has rules (Tech Note 2) that are supposed to protect private property and resources. I do not think the risk analysis done on our property reflects real threats. My stream has a slope 3 times steeper than the stream that ODF said was safe to log and then a debris flow took out the town of Woodson. When Weyerhaeuser logged, they knew I had a water right and left big buffers along the stream.

(Ex. A24 at 1.)

24. In response to Mr. Lund's comments, Appellant provided the following follow-up comments to the Department via email on March 16, 2022:

> In response to Larry's comments, I'd like to add to my comments and elaborate on the Woodson slide that he mentions. This slide initiated in an OSU clearcut, and while there are key differences (plugged culvert and midslope ponding), it is worth noting that Spring Branch, from top of Nordgren HL to Larry's house, is more than 3 times steeper than Woodson, which wiped out several houses. Other damaging events which were simple, shallow landslides and resulting debris flows, occurred in basins comparable

to Spring Branch/ Nordgren. The Nordgren unit is steeper than these other notable slides, including some that ODF has investigated. Here are some stats:

Slide	Basin Elevation Drop	Basin Length	Avg Basin Slope
Dodson	1860	5200	36%
Woodson	1330	10200	13%
Rock Creek	2900	8700	33%
Nordgren HL	1315	3600	37%

In addition, basin shape, drainage linearity, maximum slope, and historic debris flows provide evidence of overall basin debris flow hazard. In every regard, Spring Branch represents a serious hazard to downslope property. To review, the upper canyon is concave with multiple confluent headwalls and scarps. During this past winter in a 2-year rain event, a new scarp and debris flow formed in Stimson's last clearcut in the western part of the upper basin and could easily become much larger in a 100-year event. The new logging unit is even steeper and contains multiple headwalls and the main channel is nearly dead straight and pointed at downstream properties. Historic flows from this is canyon form a broad fan that covers most of the Lund and Bollebrake properties and part of one of our fields. The large flows necessary to create this fan are almost certainly events precipitated by rare storm events after logging or wildfire, because that is when big slides are most likely to happen. Everyone knows this to be true. One such event would certainty compromise the domestic water use of the stream for a considerable time.

Rare events are only rare in short time frames. The chance of a 100-year event occurring over the first decade after logging is 10%. In 25 years, which is the period of time required to reduce landslide risk to near pre-harvest levels, the chance is 25% - no longer a rare event. Even a thousand-year event becomes plausible in 10 or 25 years (1 to 2.5% chance). These are not odds I would want to bet my house and water system on if upslope logging has also increased the size of a potential flow.

I have to say that it is astounding to me that ODF would conclude that Nordgren HL presents a minimal risk to properties below Spring Branch. How quickly we all seem to forget, especially when money is involved. Just 13 years ago, Mike Cafferata was Policy Chief at ODF. After the Woodson slide, the Oregonian reported the following:

"A separate administrative review by the Oregon Department of Forestry, almost finished, has found that when reviewing the OSU logging the state should have better recognized the history of landslides in the area and the homes in danger be low.["]

"[']Clearly we didn't capture that - our tools weren't strong enough,['] said Mike Cafferata, policy unit manager at the Department of Forestry."

> Apparently they are still not strong enough. Please incorporate this email into my official comments on Nordgren HL.

(Ex. A25 at 1-2.)

25. On March 17, 2022, Stewardship Forester Jacobs, on behalf of the Department, provided the following comment to Stimson regarding the January 2022 NOAP:

> THIS IS NOT A FORMAL RESPONSE TO THE WRITTEN PLAN THAT WAS SUBMITTED WITH THIS NOTIFICATION. Three documents have been added to the documents section of this NOAP as "Written Plan with map" to record the public comments received by email within the 14-day public comment period pertaining to the statutory written plan - this does not start a new public comment period, use the timestamp associated with date that the written plan was submitted (dated 03/02/22). The Stewardship Forester has 7 days from the end of the original 14-day public comment period to respond to the written plan.

(Ex. A10 at 2; emphasis in original.)

26. On March 22, 2022, Appellant submitted additional public comments to the Department. He provided some explanation regarding his understanding of the probabilities of a 100-year event, provided additional data on debris flows (including a correction of some of the data he previously provided), and a link to access a Rock Creek slide evaluation. (Ex. A30 at 5.)

27. On March 23, 2022, Stewardship Forester Jacobs, on behalf of the Department, provided formal comments to Stimson regarding the Statutory Written Plan and PFAP. (Ex. A28 at 1.) Regarding the Statutory Written Plan, Stewardship Forester Jacobs found that fully implementing the plan would likely achieve the resource protection standards of the FPA. (*Id.*) In response to the PFAP, Stewardship Forester Jacobs approved the PFAP and wrote:

> ODF approval of a PFAP to modify OAR 629-642-0400(2) Retain all trees within 20 feet of Type D stream, as authorized by OAR 629-642-0700(1), is based on ODF not informing the landowner/operator of the protected domestic Type D stream prior to commencement of the operation. Also, the landowner has committed to leave tree buffers of 1,140 linear feet and 20-90 feet width on 3 tributaries in addition to the main channel of the 810 linear feet of impacted Type D stream. Buffering the tributaries exceeds the forest practices requirements.
>
> Removal of trees within the RMA/stream channel of the impacted RMA would meet ODF Geotech recommendation to mitigate wood loading that is currently capable of being captured in a debris torrent event that could create destructive risk to the RMA and areas downstream. Also, downed trees within the RMA pose a safety risk to operators when working in the RMA to remove slash and other debris, as required. Removal of felled trees will meet the basis of these recommendations while further restoring the impacted RMA in a timelier manner through reforestation.

(*Id*.)

28. On April 1, 2022, Appellant requested a hearing on Stewardship Forester Jacobs' formal comments on the Statutory Written Plan and PFAP. (Ex. A29 at 1.) In his request for hearing, Appellant wrote, "I would like to find a way to work together toward positive outcomes on this project and I'm open to conversation if that is of interest to you as well. The main item I have asked for all along is time." (*Id.*) In his statement of interest, Appellant noted that his family farm was approximately one-third of a mile southwest of the Nordgren HL and could be affected by a debris flow originating in the Nordgren HL. (Ex. A40 at 1.) Appellant made the following requests of the Board in his statement of interest:

> 1. To hear this matter as expeditiously as possible as this operation is ongoing;
>
> 2. To rescind the existing geotechnical analysis and findings and require Stimson Lumber to delay further operations, allowing time for additional analysis;
>
> 3. To require ODF to commission a third-party geologist who is mutually agreeable to ODF and downslope neighbors to thoroughly analyze Spring Branch canyon and downslope properties, and to prepare a report detailing geologic hazards, the potential effects of proposed logging, and reasonable and customary mitigation;
>
> 4. To require Stimson Lumber to implement all recommendations of the geologist's report prior to additional felling and yarding activities;
>
> 5. To improve the accountability of ODF by clarifying the responsible party in the event of oversights, errors and omissions in compliance with the FPA. In this case, a type D stream has been adversely affected, yet ODF insists that the FPA has been followed. Is ODF or the landowner responsible for damage to resources in the event that either or both parties fail in due diligence?

(*Id.* at 1-2.)

29. Mr. Buren has worked as a Geotechnical Specialist for the Department since 2011, performing, among other things, landslide hazard and risk assessment for the protection of natural resources and public safety. (Ex. A40 at 1.) He received a bachelor's of science in geology from Oregon State University in 1987 and a master's of geology from Northern Arizona University in 1992. He is a Registered Professional Geologist and Certified Engineering Geologist with the State of Oregon. (*Id.* at 2.)

30. Mr. Elbert is an engineer with a bachelor's degree in structural, geotechnical and hydrological engineering and a master's degree in civil engineering. He has worked on several projects that involve assessing potential debris flows and developing plans to mitigate risks associated with those debris flows in Oregon, Washington, and Alaska. He was licensed as a professional engineer in the State of Oregon previously, but allowed his license to lapse into delinquent status in 2019. He has not worked on harvest projects in Oregon that required compliance with the Oregon FPA. (Test. of Elbert.)

31. Mr. Elbert spent approximately two to three hours touring on or near the Nordgren

HL site near the Lund Residence. He did not prepare a written report following his site visit. He does not recall the exact date he toured the site, but estimates it was "a couple months ago." (Test. of Elbert.) In his experience, it takes him approximately two to five days of "on the ground" evaluation of a site to determine the risks of landslides and the necessary remediation measures. (*Id.*)

32. Appellant has worked as a forester in Oregon for approximately 35 years. His experience includes fire management and reforestation. He received his Ph.D. in plant genetics in the fall of 2021. He is not a licensed engineer or geologist in the State of Oregon. (Test. of Appellant.)

33. In approximately 2002, in preparation for logging on Gales Peak, Weyerhaeuser submitted a Timber Harvest and Management Plan map to the Department. (Test. of Appellant; Ex. R4 at 1.) The map showed a portion of what is now Nordgren HL, along with Spring Branch stream and its path past the Lund Residence. (Ex. R4 at 1.) On that map, Weyerhaeuser labeled Spring Branch stream a "Small D" type stream. (*Id.*)

34. Technical Note Number 2, effective January 1, 2003 and edited January 24, 2019 to recognize updated rule references, was developed by the Department to help resource professionals plan for harvest operations or road construction on steep slopes. It provides guidance on how to determine the risk and necessary forest practices in HLHL areas. (Ex. A42 at 1.) A summary of the steps are as follows:

> **Initial screening of operations**
>
> The initial screen determines if there may be high landslide hazard locations within the operation area **and** if there may be structures or roads in the path of a potential shallow, rapidly moving landslide below the operation area * * *.
>
> The Oregon Department of Forestry will conduct the initial screen to determine if the shallow, rapidly moving landslides and public safety rules might apply to an operation. The results of the initial screen determine if further investigation is needed.
>
> * * * * *
>
> **Overview of steps for determining necessary forest practices**
>
> For operations that meet the initial screen described earlier, further investigation using the five following steps is needed to determine if the operation is subject to the shallow, rapidly moving landslides and public safety rules, and to determine the required forest practices. Note that all operations containing high landslide hazard locations are subject to the rules for natural resource protection, regardless of whether the public safety rules also apply.
>
> **Step 1** - Determine the ***further review area*** for the operation. The further review area begins at high landslide hazard locations within the operation **and** continues down the channel or slope below the operation until that channel or slope cannot transport a shallow, rapidly moving landslide.

Part A - Identifying ***High Landslide Hazard Locations***
Part B - Identifying downslope extent of the ***Further Review Area***

Step 2 - Verify if there are structures or public roads below the operation area and in the further review area. If so, determine the ***Exposure Category*** for these structures or roads. If not, then the landslide and public safety rules do not apply. Apply natural resource forest practices rules.

Step 3 - Determine Rapidly Moving Landslide Impact Rating as ***extreme***, ***serious***, ***moderate***, or ***unlikely***.

Step 4 - Downslope Public Safety Risk is determined as ***Substantial, Intermediate, or Low***.

Step 5 - Harvesting and road building practices are regulated based on the Downslope Public Safety Risk Level determination.

(*Id.* at 1-2, 4-5; emphasis in original.) The note describes in further detail how each of the steps should be accomplished. (*Id.* at 5-9.)

35. Similarly, Technical Note Number 6, effective January 1, 2003, was developed by the Department to help geotechnical professionals determine the rapidly moving landslide impact ratings for proposed forest operations. (Ex. A43 at 1.)

CONCLUSIONS OF LAW

1. The Board of Forestry should affirm the comments of the State Forester (issued through Stewardship Forester Eric Jacobs on March 23, 2022) in response to the Statutory Written Plan and the Plan For Alternate Practice (prepared by Stimson Lumber Company and dated February 24, 2022), which were prepared pursuant to ORS 527.670(3)(a) for an operation that occurs within 100 feet of a stream determined by the State Forester to be used by fish or for domestic use.

2. Neither Appellant nor Bighorn Logging Corporation are entitled to attorney's fees and costs associated with this contested case hearing.

OPINION

Burden of Proof

Following Appellant notifying the Department that logging was occurring near a stream with a domestic water use, Stimson submitted a Statutory Written Plan and a PFAP to the Department. Appellant submitted formal comments on the Statutory Written Plan and the PFAP. Stewardship Forester Jacobs subsequently made formal comments on the Statutory Written Plan on behalf of the Department, and approved the PFAP with formal comments. Appellant filed an appeal pursuant to ORS 527.670(10)(b) and OAR 629-605-0170(9), as a person adversely affected or aggrieved by the operation.

As the party challenging the Department's comments, Appellant bears the burden of proving, by a preponderance of the evidence, that the Board of Forestry should modify or rescind the comments of the State Forester (issued through Stewardship Forester Eric Jacobs on March 23, 2022) in response to the to the Statutory Written Plan and the Plan For Alternate Practice (prepared by Stimson Lumber Company and dated February 24, 2022). ORS 183.450(2) and (5); *Dixon v. Board of Nursing*, 291 Or App 207, 213 (2018) (in administrative proceedings, the preponderance standard generally applies). Proof by a preponderance of the evidence means that the fact finder is convinced that the facts asserted are more likely true than false. *Riley Hill General Contractor v. Tandy Corp*., 303 Or 390, 402 (1987). For the reasons that follow, Appellant has not met his burden.

The Written Plans

Non-Statutory Written Plan

On January 25, 2022, Stimson submitted a Non-Statutory Written Plan to the Department, due to HLHLs in the proposed harvest area. Based on Mr. Buren's finding that Area D (the area of Nordgren HL upstream from the Lund residence and Appellant's farm) had a PSRL rating of "low," Stimson planned to cable log Area D "as normal." Exhibit A9 at 1. On February 4, 2022, Stewardship Forester Jacobs made a formal comment indicating that he had reviewed Stimson's Non-Statutory Written Plan and found no protected resource concerns. Pursuant to OAR 629-605-0170(10), and as discussed more fully below, Non-Statutory Written Plans are not appealable. As such, Appellant does not have the right to challenge the Non-Statutory Written Plan and the findings of the Department associated with that plan, including the PSRL risk rating of the land or the forest practices requirements related to the HLHL areas.

Statutory Written Plan

ORS 527.670(3) provides, in relevant part:

> In addition to any other types of operations identified by the board, the board shall adopt rules to require a written plan for the following:
>
> (a) An operation that occurs within 100 feet of a stream determined by the State Forester to be used by fish or for domestic use, unless:
>
> (A) The board, by rule, provides that a written plan is not required because the operation will be conducted according to a general vegetation retention prescription described in administrative rule;
>
> (B) The operation will not directly affect the riparian management area and the State Forester, acting under authority granted by a board rule, waives the written plan requirement; or
>
> (C) The operation will be conducted pursuant to a stewardship agreement entered into under ORS 541.973.

OAR 629-605-0170(2) provides:

> Statutory Written Plans for Operations near * * * Type D Streams. An operator must submit to the State Forester a written plan as required by ORS 527.670(3) before conducting an operation that requires notification under OAR 629-605-0140, and that is within 100 feet of a * * * Type D stream.

The Department originally designated the stream running near the Lund residence and the Kral farm a Type N stream (not fish bearing or domestic use), based on erroneous information from OWRD. After learning that the stream may have a domestic water use, the Department contacted OWRD and, after some further investigation, reclassified the stream a Type D stream (fish bearing or domestic use). On February 24, 2022, Stimson submitted a Statutory Written Plan as required by ORS 527.670(3) and OAR 629-605-0170(2) due to the change in the classification of the stream.

Appellant argued that the Department and Stimson knew or should have known that the stream was a Type D when Stimson originally began logging operations on the Nordgren HL. While a prior landowner of the Nordgren HL may have classified the stream as a Type D previously, it is unreasonable to expect that Stimson would rely on old records from a competitor or that the Department would retain all information about parcels of land submitted by landowners and operators in a manner that would allow the Department ready access to that information each time it processes a NOAP. Furthermore, even if the Department had found the information from the prior landowner, it would be unreasonable for the Department to rely on that information over the information received from OWRD, as the prior landowner could have misclassified the stream. OAR 629-635-0200 discusses the classification of water systems, in part, as follows:

> (1) The purpose of this water classification system is to match the physical characteristics and beneficial uses of a water body to a set of appropriate protection measures.
>
> (2) For the purposes of applying appropriate protection measures, the State Forester shall classify waters of the state as streams, wetlands, or lakes.
>
> (3) The State Forester shall further classify streams according to their beneficial uses and size.
>
> (4) The State Forester shall classify streams into one of the following four beneficial use categories:
>
> (a) Type F;
>
> (b) Type SSBT;
>
> (c) Type D;
>
> (d) Type N.
>
> (5) For purposes of classification, a stream is considered to have domestic water use only if a water use permit has been issued by the Oregon Water Resources Department.

Pursuant to OAR 629-635-0200(5), the Department could only classify the stream as a Type D *if* OWRD had issued a water use permit. Thus, the Department was required to rely on information provided to it by OWRD when classifying the stream and properly classified it as a Type N originally, changing the classification to a Type D once OWRD updated the information regarding the water use permit. Thus, Stimson was not required to submit a Statutory Written Plan until the classification of the stream changed to a Type D.

In the Statutory Written Plan, Stimson indicated that the buffer of the streams would "meet or exceed the 20 foot rule requirement." Exhibit A14 at 1. The rule referenced by Stimson is OAR 629-642-0400, titled "General Vegetation Retention Prescription for Type D and Type N Streams" and provides, in part:

> (1)(a) Operators shall apply the vegetation retention requirements described in this rule to the riparian management areas[3] of Type D and Type N streams.
>
> (b) Segments of Type D or Type N streams that may be of a different size within an operation shall not be combined or averaged together when applying the vegetation retention requirements.
>
> (c) Trees left to meet the vegetation retention requirements for one stream type shall not count toward the requirements of another stream type.
>
> (2) Operators shall retain along all Type D, and large and medium Type N streams:
>
> (a) All understory vegetation within 10 feet of the high water level;
>
> (b) All trees within 20 feet of the high water level; and
>
> (c) All trees leaning over the channel.

Pursuant to the FPA, as cited in OAR 629-642-0400(1)(b), Stimson was required to retain vegetation in the RMA within 20 feet of the high water level of the stream. However, by the time Stimson learned of the reclassification of the Stream to a Type D, logging operations had already begun, leading to logging within the 20-foot RMA buffer on portions of the stream. Thus, the Statutory Written Plan could only to address the conditions on the site at that time and Stimson's plan for the site moving forward.

Following receipt of Stimson's Statutory Written Plan and completion of the public comment period, Stewardship Forster Jacobs authored a formal comment that the Statutory Written Plan had been reviewed and that fully implementing it would likely achieve the resource protection standards of the FPA. Appellant provided no evidence that the resource retention practices in the Statutory Written Plan for standing vegetation in the RMA was inadequate or violated the FPA. Thus, Appellant presented no persuasive evidence that Stewardship Forester Jacobs' comments on the Statutory Written Plan should be modified or rescinded.

Plan for Alternate Practice

[3] OAR 629-600-0100(63) defines the "riparian management area" as "an area along each side of specified waters of the state within which vegetation retention and special management practices are required for the protection of water quality, hydrologic functions, and fish and wildlife habitat."

As discussed above, at the time Stimson learned of the reclassification of the stream to a Type D, some timber in the RMA had been felled and was laying in and around the stream. Since this was a violation of the FPA, Stimson was required to submit a PFAP pursuant to OAR 629-605-0173. OAR 629-605-0173 discusses the requirements for a PFAP, in part, as follows:

> (1) Operators must obtain written approval of a plan for an alternate practice from the State Forester before conducting forest practices utilizing protection standards or methods different than those specified in rule or statute.
>
> (2) Plans for an alternate practice must include sufficient information to allow the State Forester to assess the plan to determine that the practices described in the plan will yield results consistent with ORS 527.610 to 527.770 and administrative rules adopted thereunder.
>
> (3) Plans for alternate practices proposed as part of a written plan required by ORS 527.670(3) shall be subject to the hearings provisions of 527.700(3) (Appeals from orders of State Forester hearings procedure; stay of operation); and shall be subject to the provisions of 527.670(10), (11) and (12) (Commencement of operations; when notice and written plan required; appeal of plan) prescribing certain waiting periods and procedures.
>
> (4) An operator must comply with all provisions of an approved plan for an alternate practice.
>
> (5) The following rules require an operator to submit a plan for an alternate practice and obtain approval from the State Forester of the plan before starting the specified practice or operation:
>
> * * * * *
>
> (aa) 629-642-0700(1)(a) — Utilizing site specific vegetation retention prescriptions for streams and riparian management areas[.]

OAR 629-642-0700 discusses site-specific vegetation retention prescriptions in a PFAP as follows:

> (1)(a) Operators are encouraged to develop site specific vegetation retention prescriptions in a plan for an alternate practice.
>
> (b) A primary aim of these prescriptions is to identify opportunities and allow incentives for restoring or enhancing riparian management areas or streams.
>
> (c) Another purpose of site specific vegetation retention prescriptions is to allow for changes to the vegetation retention requirements in OARs 629-642-0100, 629-642-0105 and 629-642-0400. The changes must provide for the functions and values of streams and their riparian management areas as described in the vegetation retention goals for streams while affording a better opportunity to meet other objectives.

(2) Operators may develop site specific vegetation retention prescriptions for streams and their riparian management areas to achieve the vegetation retention goals described in OAR 629-642-0000 if:

(a) The potential of the streamside stand to achieve basal area and stand density similar to mature conifer forest stands in a "timely manner" is questionable; or

(b) In-stream conditions are impaired due to inadequate large woody debris or other factors; or

(c) The modification of a standard or practice would result in less environmental damage than if the standard or practice were applied.

(3) A plan for an alternate practice shall be approved if the State Forester determines that when properly executed the alternate plan will have no significant or permanent adverse effects and:

(a) It will meet or exceed the vegetation retention goals in a more "timely manner" than if the plan were not implemented; or

(b) The long-term benefits of the proposed restoration practice are greater than short-term detrimental effects; or

(c) The proposed practice will result in less environmental damage than if the regular rules were followed.

(4) Factors that may need to be considered in the plan include, but are not limited to, the potential of the existing streamside stand to achieve mature conifer forest characteristics, the long-term supply of woody debris, survival of planted conifers, sensitivity to changes in water temperature and water quality, the potential for sedimentation, the stability of woody debris placed in aquatic areas, and monitoring the direct effects of the proposed practices.

In its PFAP, Stimson proposed to buffer the stream at or exceeding the 20 foot rule, leave approximately 3.8 acres of standing timber along the north side of the main stem, remove felled trees in the RMA to increase reforestation and planting efforts, seed and mulch any exposed soil in the RMA, water bar any skyline corridors that had gouging which might deliver sediment into the stream, and reforest the RMA. As required by OAR 629-605-0173(1), the Department reviewed the PFAP and made a decision regarding its approval. Following discussions with nearby landowners, a second site visit by Mr. Buren, and further investigation by the Department, Stewardship Forster Jacobs approved the PFAP and provided formal comments. In his comments, Stewardship Forster Jacobs stated that removal of the downed trees in the RMA/stream channel would meet the recommendation of Mr. Buren to mitigate wood loading during a debris torrent event that could destroy the RMA or areas downstream. He also commented that the down trees posed a safety risk to operators in the RMA and found, for those reasons, that removal of the felled trees in the RMA would help restore the RMA in a timelier manner.

Appellant argues that the Stewardship Foresters comments on the PFAP conflicts with

the comments on the Non-Statutory Written Plan. Appellant points out that the Non-Statutory Written Plan indicates that the geotechnical analysis rated Area D as having a PSRL of low, but the comments on the PFAP discusses risks of wood loading in a "debris torrent event that could create destructive risk to the RMA and areas downstream." Exhibit A28 at 1. The PSRL rating of low was based on Mr. Buren's finding of an impact rating of "Unlikely" for Area D (that is, that it was unlikely that a rapidly moving landslide in the operational area would reach the structures in Area D – the Lund residence). The comments in the PFAP are directed at what could occur if the downed timber was left in place. Because the approved PFAP recommends removing the wood, the concerns about destruction in a debris torrent would not increase the risk to downstream residences and thus the previous PSRL would remain unchanged. Thus, Appellant's argument that the conflicting comments are a basis to require that the Department modify or rescind the comments on the PFAP is not persuasive.

Appellant has provided no persuasive evidence that the strategies proposed by Stimson in the PFAP would not restore or enhance the riparian management area or stream effectively and in a timely manner. While other experts in the field may suggest alternative methods for restoring or enhancing the RMA or stream, a mere difference of opinion about how the restoration should occur is insufficient to support overturning the Stewardship Foresters comments. Rather, Appellant would have had to show that the methods proposed by Stimson and approved by the Department would not meet the standards of the FPA and associated rules. He has not done so. For these reasons, and the reasons discussed below, Appellant has not met his burden to show that the approval of the PFAP and subsequent comments made by Stewardship Forster Jacobs should be amended or rescinded.

Appellant's Arguments

In his request for hearing and during the hearing, Appellant made a number of arguments. Ultimately, his arguments center on the stability of the slopes in the Nordgren HL and the potential impact of a landslide to the Lund residence and its water source, as well as the potential impact to Appellant's farm during a landslide event. Appellant argues that the protection measures laid out in the PFAP were inadequate to mitigate potential landslide hazards to downstream areas, and that the geotechnical analysis done by Mr. Buren was insufficient. Accordingly, Appellant requested that this order (1) stay the logging operations on the Nordgren HL, (2) rescind the existing geotechnical analysis done by Mr. Buren, (3) hire a third party to conduct a new geotechnical analysis, and (4) require that the Department and Stimson abide by the recommendations of the third party geotechnical expert.

Under OAR 629-672-0300,[4] Appellant could have requested a stay of the logging

[4] OAR 629-672-0300 provides, in part:

> (2) Any person entitled to a hearing under OAR 629-672-0210 may apply to the State Forester for a stay of the operation pending a hearing on the matter. The request for a stay shall include:
> (a) The name, address and telephone number of the person filing the request, identifying that person as a petitioner; and the names, addresses and telephone numbers of each of the other parties to the proceedings, identifying those parties' roles in the proceedings. When any party is represented by an attorney in the proceeding, then the name, address and telephone number of the attorney shall be provided and the address and telephone number of the party may be omitted;
> (b) Identification of the operation for which the stay is requested;

operations pending a hearing in this matter. However, there is no evidence that Appellant formally requested a stay, or that he proposed or supplied a bond of not less than $15,000 to the Department with his request for stay. Furthermore, the initial temporary ruling on any request for a stay would be granted or denied by the State Forester, not the ALJ. The ALJ does not have the jurisdiction to grant a stay in this matter when one has not been properly requested under OAR 629-672-0300. As such, Appellant's request for a stay is denied.

Appellant's argument that Mr. Buren's geotechnical analysis should be overturned is also without merit. Because the geotechnical analysis was conducted as part of a Non-Statutory Written Plan, Appellant does not have the right to contest that determination through a contested case proceeding. ORS 527.700[5]; OAR 629-605-0170(10). As such, the ALJ does not have the

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> (c) A statement of facts and reasons sufficient to show that the stay request should be granted because:
> (A) Commencement or continuation of the operation will constitute a violation of the rules of the board;
> (B) The person requesting the stay will suffer irreparable injury if the stay is not granted;
> (C) The person requesting the stay has met the requirements of ORS 527.700(3), (4) and (5); and
> (D) Granting the stay will not result in substantial public harm.
> (d) A statement identifying any potential injury to the other parties in the matter if the stay is granted. If the purposes of the stay can be achieved with limitations or conditions that minimize or eliminate possible injury to other persons, petitioner shall propose such limitations or conditions. Petitioner shall propose an amount of bond or other undertaking, not less than $15,000 to be imposed on the petitioner should the stay be granted, explaining why that amount is reasonable in light of the identified potential injuries;
> (e) A description of any other procedures, if any, the petitioner believes should be followed by the State Forester in determining the appropriateness of the stay request; and
> (f) An appendix of affidavits containing all evidence upon which the petitioner relies in support of the statements required in subsections (2)(c) and (d) of this rule.
> (3) The request for stay and all required accompanying documents must be filed with the State Forester at the same time the request for a hearing is filed.
> * * * * *
> (10) If the State Forester grants the stay, the person requesting the stay shall be required to give an undertaking which may be in the amount of the damages potentially resulting from the stay, but in any event shall not be less than $15,000. The undertaking shall be in the form that the State Forester determines best protects the interests of the person against whom the stay is imposed. In the event the written plan for which the stay was granted is affirmed in whole or in part, the State Forester shall retain the undertaking until all damages, including attorney fees, costs and expenses have been paid.
> (11) The State Forester's temporary order shall be subject to review as part of the hearing reviewing the written plan. The temporary order of the State Forester may be affirmed, rescinded or modified by final order of the Board.

[5] ORS 527.700 provides, in relevant part:

> (1) Any operator, timber owner or landowner affected by any finding or order of the State Forester issued under ORS 527.610 to 527.770 and 527.992 may request a hearing within 30 days after issuance of the order. The hearing shall be commenced within 14 days after receipt of the request for hearing and a final order shall be issued within 28 days of the request for the hearing unless all parties agree to an extension of the time limit.
> (2) The State Board of Forestry may delegate to the administrative law judge the authority to issue final orders on matters under this section. Hearings provided under this

jurisdiction to make a determination that the geotechnical analysis should be overturned.

Additionally, even if the ALJ had the authority to overturn the geotechnical analysis, Appellant's evidence that the geotechnical analysis was unsound or somehow faulty was not persuasive. Appellant presented Mr. Elbert as a purported expert on the subject of HLHLs. However, Mr. Elbert has little to no experience in the administration or requirements of the Oregon FPA. At the time of the hearing, Mr. Elbert did not have a valid, active license to practice professional engineering in the State of Oregon. He spent very little time examining the site, despite his opinion that it would require multiple days of "on the ground" work to properly evaluate a site. He prepared no written report regarding the site, could not recall when he visited the site, and testified from only his memory.

Appellant's other evidence was from his personal experience and knowledge, most of which he admitted was only acquired in the last several months because of this case. He mentioned several studies that he claimed were relevant, but provided none of them as evidence. He has no formal training or experience evaluating HLHLs or in the administration of the FPA as it relates to HLHLs.

Mr. Buren, on the other hand, has worked as a Geotechnical Specialist for the Department since 2011 performing landslide hazard and risk assessments. He has a master's degree in geology, and is a registered professional geologist and certified engineering geologist in the State of Oregon. He initially visited the Nordgren HL, and conducted a "desktop" review of the site. When Appellant and neighbors raised concerns about the case, he did a second review and site visit. He presented his findings in a written memo, explaining his reasoning and providing evidence for his findings. As such, even if I had the legal authority to review the geotechnical analysis, I would find Mr. Buren's analysis and conclusion more persuasive than that of Appellant and Mr. Elbert.

For the foregoing reasons, Appellant's argument that the existing geotechnical analysis done by Mr. Buren should be rescinded is without merit. There is no legal basis for the ALJ to overturn that analysis. Likewise, there is no legal basis for the ALJ to require the Department hire a third party to conduct a new geotechnical analysis of the Nordgren HL. Nor is the evidence persuasive that such a review is necessary. Mr. Buren's geotechnical analysis of the site was sufficient to meet the requirements of the FPA.

Appellant also argued that the issues he raised concerning the Nordgren HL are so interconnected as to be inseparable. While there is certainly overlap between the issues, Appellant's concerns about the HLHL areas and the accompanying geotechnical review are distinct from any concerns about the RMA surrounding the stream. Regardless of the geography

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section shall be conducted as contested case hearings under ORS 183.413 to 183.470. The board may establish such rules as it deems appropriate to carry out the provisions of this section. Appeals from final hearing orders under this section shall be provided in ORS 183.482, except that the comments of the board or the State Forester concerning a written plan are not reviewable orders under ORS 183.480.

(3) Any person adversely affected or aggrieved by an operation described in subsection (4) of this section may file a written request to the board for a hearing if the person submitted written comments pertaining to the operation within the time limits established under ORS 527.670 (9).

(4) A request for hearing may be filed under subsection (3) of this section only if a written plan was required by rules adopted under ORS 527.670 (3).

* * * * *

of the land on the Nordgren HL, Stimson was required by the FPA to maintain vegetation in the RMA and, when that was not done, had to submit a PFAP to repair the damage done. Likewise, if no damage had occurred to the RMA, Stimson would still have been required to submit a Non-Statutory Written Plan for the HLHL areas. Thus, while there may be overlap between the issues, Appellant's argument that the issues are too interconnected as to be inseparable fails.

Request for Attorney Fees

ORS 527.700(7) provides that:

> The board may award reasonable attorney fees and expenses to each of the prevailing parties against any other party who the board finds presented a position without probable cause to believe the position was well-founded, or made a request primarily for a purpose other than to secure appropriate action by the board.

OAR 629-672-0310, titled "Actual Damages Resulting from a Stay; Attorney's Fees" provides, in relevant part:

> (2) The board may award reasonable attorney's fees and expenses to each of the prevailing parties against any other party who the board finds presented a position without probable cause to believe the position was well founded, or made a request primarily for a purpose other than to secure appropriate action by the board. If a written plan pertaining to an operation for which a stay was granted is determined to likely result in compliance with the Forest Practices Act and rules, the board shall award reasonable attorney's fees in favor of each of the prevailing parties against the person requesting the stay. If the board rescinds or modifies the comments on the written plan as submitted by the State Forester pertaining to any operation, the board shall award reasonable attorney's fees and costs against the state in favor of each of the prevailing parties. Any prevailing party, as described above, may file a petition for attorney's fees, expenses and costs for the portion of the case upon which it prevailed.
>
> (3) An award of attorney's fees shall not exceed $5,000.
>
> (4) As used in this rule, a "prevailing party" is one in whose favor an order pertaining to a written plan is issued, and may include the Department of Forestry where a written plan is affirmed. Where the board rescinds or modifies the comments on portions of a written plan and determines that other portions will likely result in compliance with the FPA or rules, each party may be regarded as a prevailing party.
>
> * * * * *
>
> (6) Attorney's fees, expenses and costs shall include only the following:
>
> (a) The actual amount of fees charged by the attorney for services directly connected with prosecuting or defending against the challenge to the written plan; or

(b) Where the prevailing party is not charged a specific fee for the case (e.g., because the attorney is paid on a retainer basis or is an employee of the party), the fee shall be the reasonable value of the attorney's services directly connected with prosecuting or defending against the challenge to the written plan. "Reasonable value" means the equivalent of the fees charged by practitioners of similar skill and experience under section (6)(a) of this section, and includes such secretarial and other overhead costs as are customarily included in those fees.

(7) A prevailing party must file a petition and supportive affidavit for award of actual damages from a stay or attorney fees within 30 days of the date of the issuance of the board's comments in the case for which awards are requested. A copy of the petition, together with a supporting affidavit, shall be served upon the opposing party or parties at the time the petition is filed and proof of service shall be provided to the board. The board shall dismiss petitions which do not comply with this rule. The petition shall include:

(a) A statement of the facts upon which petitioner relies in claiming that it is a prevailing party;

(b) A statement of the amount of award requested, supported by an affidavit that describes in detail the actual damages incurred and the basis for the amount of damages requested; or amount of the fees incurred by petitioner, or where the petitioner was not charged fees, the basis for the amount of the costs requested; and

(c) A statement describing how the amount of the award requested would be consistent with the policies and the purposes of the Oregon Forest Practices Act.

(8) An opposing party shall have 14 days from the date of service of the petition to file written objections. Such objections shall be served on the petitioner at the time the objections are filed and proof of service shall be provided to the board.

(9) In designating the amount of fees and costs to be awarded, the board shall consider, but is not limited to, the following factors:

(a) Consistency with the policies and purposes of the Oregon Forest Practices Act including but not limited to the following considerations:

(A) The issue in the case was one of first impression; or

(B) A complaint or defense was frivolous or otherwise without merit; or

(C) A party was an individual who, due to the circumstances of the case, had to rely upon his or her personal financial resources.

(b) In the case of attorney's fees, the appropriate charges for the services rendered, based on:

(A) The time and labor customarily required in the same or similar cases;

(B) Hourly charges customarily made by attorneys for rendering similar services;

(C) The novelty and difficulty of the issues and the amount of preparation, research or briefing reasonably required; and

(D) The skill requisite to perform the services properly.

(c) Awards in similar cases.

(10) The administrative law judge who presided over the hearing on the written plan shall examine the petition for award of actual damages or attorney's fees and any associated arguments. The administrative law judge may require the parties to provide additional information or conduct hearings as the judge deems necessary. The administrative law judge shall prepare a proposed order for the board.

(11) The board shall review the administrative law judge's proposed order and issue a final order awarding actual damages or attorney's fees pursuant to this section, based upon the record. The board may award all or a portion of the actual damages or fees requested. The board will not act on a petition until the appeal period has run or, where an appeal has been filed, during the pendency of the appeal.

In this case, both Appellant and Bighorn Logging made requests for attorney fees and expenses associated with this contested case.[6] As set out above, Appellant's arguments that Stewardship Forester Jacobs' comments on the Statutory Written Plan and the PFAP should be modified or rescinded are without merit. As such, Appellant is not a prevailing party in the matter and is his request for attorney's fees and expenses should be denied.

Bighorn Logging is a prevailing party in this matter, but is also not entitled attorney's fees and expenses in this case. While Appellant did not prevail, I am not persuaded that he presented a position without probable cause to believe the position was well founded. Nor am I persuaded that he made a request primarily for a purpose other than to secure appropriate action by the Board. While Appellant raised multiple arguments regarding HLHLs on the Nordgren HL which were ultimately outside the scope of this contested case hearing, as an unrepresented litigant navigating the intricacies of the FPA and the contested case process, his misunderstanding regarding what was outside the scope of what he could appeal and argue at hearing is reasonable. I believe Appellant held a genuine, reasonable belief that his position was well founded. The resolution sought was to have the Board take action to comply with Appellant's reading and understanding of the FPA. There is no evidence that he appealed the

[6] While OAR 629-672-0310 appears to contemplate petitioning and ruling on attorney's fees and expenses occurring after the contested case process and the Board issuing the Final Order (*see e.g.,* OAR 629-672-0310(7)), the parties requested that the ALJ make findings of fact and a recommendation to the Board regarding the requests for attorney fees.

matter in an effort to harass, delay, or otherwise damage Stimson, Bighorn Logging, or the Department. Finally, no formal stay was requested or granted in this case. For the foregoing reasons, Bighorn Logging's request for attorney's fees and expenses in this case should be denied.

ORDER

I propose the Oregon Department of Forestry, Private Forests issue the following order:

The comments of the State Forester (issued through Stewardship Forester Eric Jacobs on March 23, 2022) in response to the Statutory Written Plan and the Plan For Alternate Practice (prepared by Stimson Lumber Company and dated February 24, 2022), which were prepared pursuant to ORS 527.670(3)(a) for an operation that occurs within 100 feet of a stream determined by the State Forester to be used by fish or for domestic use should be AFFIRMED.

Appellant's request for attorney's fees and costs associated with this contested case hearing should be DENIED. Bighorn Logging Corporation's request for attorney's fees and costs associated with this contested case hearing should be DENIED.

Kate Triana
Senior Administrative Law Judge
Office of Administrative Hearings

EXCEPTIONS TO PROPOSED ORDER

If this proposed order is adverse to you or to the agency, you or the agency may file exceptions within seven calendar days after the date of the filing of the proposed order. See OAR 629-001-0040 to 0045 and OAR 137-003-0650 to 0655. Exceptions must be filed with the Board of Forestry, through the agency contact:

Greg Wagenblast, Civil Penalties Administrator
Department of Forestry, Private Forests Division
2600 State Street
Salem, OR 97310

The exceptions shall be confined to factual and legal issues that are essential to the ultimate and just determination of the proceeding, and shall be based only on grounds that:

1. A necessary finding of fact is omitted, erroneous, or unsupported by the preponderance of the evidence on the record;
2. A necessary legal conclusion is omitted or is contrary to law or the Board's policy; or
3. Prejudicial procedural error occurred.

The exceptions shall be numbered and shall specify the disputed finding, opinions or conclusions. The nature of the suggested error shall be specified, and the alternative or corrective language provided.

The Board of Forestry will issue a final order on this matter, whether or not exceptions are filed.

After the Board has received and reviewed the proposed order and the exceptions, if any, the Board may:

1. Entertain written and/or oral argument if the Board determines it is necessary or appropriate to assist the Board in the proper disposition of the case. If allowed, oral argument will be limited to matters raised in written exceptions and shall be presented under time limits determined by the Board chair;
2. Remand the matter to the ALJ for further proceedings on any issues the Board specifies, and to prepare a revised proposed order as appropriate, under OAR 137-003-0655(2);
3. Enter a final order adopting the recommendations of the ALJ; or
4. Enter an amended proposed order or final order that modifies or rejects the recommendations of the ALJ. If the Board decides to modify or reject the proposed order, it will comply with OAR 137-003-0655 and 137-003-0665.

CERTIFICATE OF MAILING

On April 28, 2022, I mailed the foregoing Proposed Order issued on this date in OAH Case No. 2022-ABC-05271.

By: Electronic and Certified Mail

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Matthew B Devore, Assistant Attorney General
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1162 Court St NE
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Lucy M Garcia
Hearing Coordinator

EXCEPTIONS TO PROPOSED ORDER

OAH Case No. 2022-ABC-05271

NOAP 2022-531-01917

EXCEPTION 1. Page 23, para. 2: "Because the geotechnical analysis was conducted as part of a Non-statutory Written Plan, Appellant does not have the right to contest that determination through a contested case proceeding."

I disagree. The Plan for Alternate Practice (PFAP) is reviewable in this contested case, and the PFAP is a stand-alone forest practice (logging in a protected riparian management area (RMA)) and must comply with all other elements of the FPA, including landslide and public safety requirements. Since no geotechnical analysis review was completed subsequent to the PFAP, the PFAP necessarily relies upon the existing geotechnical analysis. The existing 623 review must be reviewable because it supports, and is statutorially required for, the PFAP. Statutes and rules include:

OAR 629-605-0173

3) Plans for alternate practices proposed as part of a written plan required by ORS 527.670(3) shall be subject to the hearings provisions of 527.700(3) (Appeals from orders of State Forester hearings procedure; stay of operation); and shall be subject to the provisions of 527.670(10), (11) and (12) (Commencement of operations; when notice and written plan required; appeal of plan) prescribing certain waiting periods and procedures.

Furthermore, the PFAP is itself a forest practice, independent from the rest of the logging unit. As such, it is subject to the following:

ORS 195.260

Duties of local governments, state agencies and landowners in landslide hazard areas

(4)(b) The State Forestry Department *shall regulate forest operations* to reduce the risk of serious bodily injury or death from rapidly moving landslides directly related to forest operations, and assist local governments in the siting review of permanent dwellings on and adjacent to forestlands in further review areas pursuant to subsection (1)(b) of this section.

ORS 195.260 directs ODF to regulate *all* forest operations to reduce risks to public safety from rapidly moving landslides related to forest practices. This means *all* operations, including felling, yarding, slash removal, planting and weed control.

ORS 527.710

(10) In addition to its responsibilities under subsections (1) to (3) of this section, the board shall adopt rules to reduce the risk of serious bodily injury or death caused by a rapidly moving landslide directly related to forest practices. The rules shall consider the exposure of the public to these safety risks and shall include appropriate practices designed to reduce the occurrence, timing or effects of rapidly moving landslides. As used in this subsection, "rapidly moving landslide" has the meaning given that term in ORS 195.250 (Definitions for ORS 195.250 to 195.260). [1971 c.316 §5; 1987 c.919 §14a; 1989

c.171 §69; 1989 c.904 §38; 1991 c.634 §7; 1991 c.919 §13; 1993 c.18 §126; 1995 c.79 §300; 1997 c.274 §54; 1997 c.413 §2; 1999 c.1103 §12; 2001 c.114 §52; 2001 c.540 §24; 2003 c.14 §342; 2003 c.539 §40; 2003 c.740 §7; 2009 c.217 §13; 2009 c.595 §983; 2011 c.83 §25; 2011 c.319 §21]

ORS 527.710 directs the Board of Forestry to develop rules to protect the public from forestry-related landslides for *all forest practices*. Furthermore:

OAR 629-605-0173

(2) Plans for an alternate practice must include sufficient information to allow the State Forester to assess the plan to determine that the practices described in the plan will yield results consistent with ORS 527.610 (Short title) to 527.770 (Good faith compliance with best management practices not violation of water quality standards) and administrative rules adopted thereunder.

This rule stipulates that the PFAP must document adherence to the Forest Practices Act. For the purposes of regulation, because they fall outside the normal scope of allowed forest practices, plans for alternative practice are evaluated for compliance with all other provisions of the FPA, including landslide public safety requirements, *and are subject to approval of the State Forester.* The State Forester, therefore, has broad authority to require mitigating actions for non-complying alternate practices, such as logging in a protected RMA.

Based on statute and rule, logging in the RMA requires a 623 review. Since a new review was not completed, the State Forester is relying on the previous review by Mr. Buren, dated January 5 2022. As a supporting document for the State Forester's comments, this 623 review must be subject to review in this hearing. Excluding supporting documents, such as the 623 review in this case, would render the rule allowing appeal meaningless.

EXCEPTION 2. Page 24, para. 3: "Mr Buren's geotechnical analysis of the site was sufficient to meet the requirements of the FPA"

I disagree. The geotechnical analysis is scientifically and legally inadequate and does not meet the standards laid out in rule and guidance based on the record, including Mr. Buren's testimony. Scientifically, the geotechnical analysis of Spring Branch is almost non-existent, and was performed without required field verification. Tech Notes 2 and 6 require in-depth investigation of conditions *on the ground* within each basin where operations could affect downstream safety. The site-specific investigation called for in Tech Notes 2 and 6 is a direct requirement of OAR 629-623.

In his preparation of the existing 623 analysis, Mr. Buren has testified that he did not enter the Spring Branch basin a single time to make required observations of site-specific resource conditions, many or most of which can only be verified in the field. The guidance requires *field* verification of HLHL's: "(h)igh landslide hazard locations are determined based on measurements of the steepest slopes *on-the-ground*. These *field* measurements may find slope conditions different from the initial screen, and take precedence over the screen." This on-the-ground verification was not done. Tech Note 2 further stipulates that "if there is *field* evidence of a debris fan at the mouth of the channel, the further review area continues to the lower edge of the debris fan." Mr. Buren did not map any of the debris fans

present at the mouth of Spring Branch, because this requires soil sampling and field reconnaissance – critical steps in the analysis that Mr. Buren did not perform in the field as required.

After the logging project had already begun, and only at the request of downsope neighbors, Mr. Buren finally visited the site, but his visit focused solely on two debris flow events that were of concern to neighbors, a 1996 event in Spring Branch, when the entire basin was timbered, and one from a much smaller basin to the north that initiated in a 2002 clearcut. Despite the small basin involved in the latter event, the flow approached within 100 feet of the Lund residence. The Spring Branch basin is 14 times larger than the small northern basin and is capable of generating much larger flows.

The 1996 Spring Branch flow approached within 334 feet of the residence. Given this data and the presence of large debris fans, compliance with the State Forester's statutory obligation to protect the public requires asking the following question: when the large majority of the timber is removed from the Spring Branch basin, would a 100-year storm, or a 500-year storm, be likely to generate a debris flow that would engulf the Lund residence and possibly areas downslope from there? DOGAMI debris fan mapping strongly suggests that the answer to this question is yes.

But Mr. Buren disagrees with DOGAMI; on the basis of a casual observation of "old-growth stumps" among the large loulders and debris surrounding the Lund residence, and zero additional data, Mr. Buren dismissed the boulders as evidence of an "ancient mega-failure" and not a debris flow event as clearly mapped by DOGAMI.

DOGAMI is correct. It doesn't take a master's degree in geology to see, in both LIDAR and field evidence, that the flows emanating from Spring Branch are not deep-seated landslides as suggested by Mr. Buren but are in fact fluvial in nature, meaning that when they occurred, they were moving faster than anyone could run. They were "rapidly moving landslides" of exactly the type that requires the State Forester to regulate forest practices. The fluid nature of these fans, particularly the right-hand fan at the base of Spring Branch canyon, is easily visible to anyone with a natural resources background, in the state's LIDAR map (Exhibit A6).

Disturbingly, based on nearly identical field evidence near a stream and residence to the north, GeoScience, Inc. concluded that boulders surrounding that residence *were* evidence of debris flows, and that these flows had "reached the area of this house with significant energy," despite the residence being more than 200 feet beyond the loss of confinement. The GeoScience Inc. conclusion was based on field analysis of the actual composition of the fan feature – the type of analysis that Mr. Buren was supposed to perform but did not. As a result of actual field based analysis, GeoScience Inc. recommended a flow-diverting berm be constructed to protect downslope homes, and this structure was built prior to the inception of logging.

No such accommodations have been made in Spring Branch as a result of Mr. Buren's "low" rating. Mr. Buren provides no rationale for his "low" public safety rating for Spring Branch other than the distance from the "loss of confinememnt" to homes exceeding 200 feet. In this case, distance from loss of confinement is overruled in the guidance by inclusion of the entirety of debris fan features. The inclusion of debris fans, such as the ones that underly the Lund residence and our farm, is absolutely logical because these fans are direct, incontravertible evidence of *what has happened here in the past*. This provides a means to estimate the baseline risk from rapidly moving landslides as required in OAR-629-623.

In every regard, based on the agency's own guidance, this is clearly a dangerous situation. Spring Branch is a steep, deep canyon. It has an extraordinarily high proportion of HLHL's. It has inner gorges that have been conduits for past debris flow events. These inner gorges are linear in nature and pointed straight at downstream homes. Spring Branch, like every other stream on this face of Gales Peak, has disgorged huge debris fans that have spread out broadly and appear to have transported rock and debris all the way to our farm, a possibility that Mr. Buren is unable to attest to or deny because he has not bothered to look. But I have. We have unearthed tons of angular basalt fragments of the type noted in the GeoScience report throughout our farm. The actual extent of recent and ancient debris fans here remains largely unknown, awaiting an actual analysis to be determined.

Finally, in July 2001, the Board adopted a standard for substantial risk of 1 death in 100,000 people per year. This standard is critical to providing uniformty and meaning to the rules and the agency's implementation of **ORS 195.260 and ORS 527.710.** In writing and in testimony, Mr. Buren has stated that he declines to apply this standard in his analyses and prefers to use his own definition of substantial risk, which he did not share. The arbitrary results of the agency's untethered application of the rule and failure to apply a legally adopted, measureable standard violates article 1, section 20 of the Oregon Constitution. The State Forester's approach to public safety and landslides, as evidenced in this case, is unscientific, uncompliant with rule and guidance, and unconstitutional.

EXCEPTION 3. Page 21, para. 2: "Beacuse the approved PFAP recommends removing the wood, the concerns about destruction in a debris torrent would not increase the risk to downslope residences and thus the previous PSRL would remain unchanged."

The State Forester has asserted that "(r)emoval of trees..would meet ODF Geotech recommendation to mitigate wood loading that is currently capable of being captured in a debris torrent event that could create destructive risk to the RMA and areas downstream." This assertion, supported by the ALJ, that down wood increases downstream risk, is not supported by any evidence. The only evididence presented in this case regarding the potential role of down wood is contained in Tech Note 6, and it is contrary to this assertion.

Tech Note 6 provides: "the role of down wood in debris torrent movement is not clear. One model suggests that debris torrents with higher wood content tend to deposit at steeper gradients than debris torrents with less wood (Lancaster et al 2000)." The work of Lancaster et al is more fully presented in a 2003 publication, which concludes very cleary that wood reduces runout distance:

> "The results indicate that wood in the Oregon Coast Range and, by extension, much of the Pacific Northwest is an important debris flow constituent that acts as a first order control on not only runout lengths but also locations of deposition in the network. A corollary result is that removal of wood from small drainage basins such as the study area would increase runout lengths enough to significantly increase the downstream extent of direct impact by debris flows. These results are robust because they depend only on the relatively simple physics of conservation of momentum and the widely recognized effect of bends [e.g., Benda and Cundy, 1990; Robison et al., 1999]."

This peer-reviewed, empirical and observational study, as well as several other studies it references, suggest that removal of logs from the RMA would likely *increase* the distance that destructive flows

might travel, hence *increasing* public safety risk. Mr. Buren's off-handed recommendation to allow Stimson to remove improperly felled trees from the buffer was determined without any data or analysis, is absolutely without basis, and is contrary to statutory guidance to reduce threats to the public from rapidly moving landslides related to forest practices.

EXCEPTION 4: Two exhibits in evidence reference or suggest additional geotechnical reviews within Spring Branch basin, but these additional reviews were not provided. I requested information on all previous geotechnical reviews, and ODF provided only two 2008 GeoScience reports, one of which did not involve Spring Branch at all, and the current 623 review by Mr. Buren. The 2008 GeoScience Inc. Black Diamond unit report (Exhibit A41) references a previous review by ODF staff, covering the Spring Branch portion of the Black Diamond logging unit and rating it as "low." The GeoScience report notes that:

> "A much longer and narrower fan-shaped feature is present at the mouth of Draw 1 (Spring Branch) in the vicinity of Residence C (the Lund residence) but this area was not visited during the field assessment because a decision had already been made by the ODF geotechnical specialists that the risk to this residence was low...It is GeoScience policy to only map features on a geomorphic basis if the origin can be verified by geologic evidence in the field. Because the extent of the debris fan (if any) was not field-verified for Draw 1, no fan is shown at that location although it appears probable that a fan is present."

As discussed above, field-verifiable evidence of a fan is absolutely present at the mouth of Spring Branch, and it suggests a greater risk than allowed by Mr. Buren's desktop review, and his subsequent dismissal of the boulders of a nature that GeoSciences practitioners found concerning. The ODF geotechnical review referenced in the highlighted text was not presented in public records or discovery, nor was a review that should have been completed for a 2013 logging project in the northern headwalls of Spring Branch canyon.

Another review that came to an entirely different conclusion in this same basin is evidenced in exhibit R4. This exhibit shows that Weyerhaeuser was precluded from logging HLHL's in Spring Branch canyon, leaving behind a half-million board feet of their own logs in the lower part of the canyon. The prohibition of logging HLHL's in Spring Branch would have affected the value of 100 acres of timber which Stimson subsequently acquired from Weyerhaeuser, a fact that would have been disclosed to Stimson because of the values involved. Current ODF staff administered this logging prohibition on Spring Branch HLHL's, because the downslope public safety risk was too high. Now ODF is administering things differently. Nothing has changed in Spring Branch other than ownership. The geology is the same. The location of residences is the same. The actual risk is the same. But now ODF has determined, on the basis of no apparent evidence, that Spring Branch is safe to log, and that removing improperly felled trees from the stream will somehow protect public safety despite their own guidance.

I would like to ask if these previous geotechnical reviews or information about them might be available anywhere at the agency, and if agency staff could share more on the reasons for and timing of the agency's changing views of what is safe to log in this specific basin. I was denied an opportunity to question Mr. Cafferata due to scheduling conflicts, but I believe he was the forest practices forester at the time of the Weyerhaeuser logging operation in Exhibit R4. Agency staff may also be able to explain why the two GeoScience reports flank Spring Branch, but neither of them provides any analysis of this

basin, which was left entirely to ODF geotechs to analyze. I think an understanding of this situation may be important to the Board's decision, but only ODF has the information.

BEFORE THE BOARD OF FORESTRY
STATE OF OREGON

IN THE MATTER OF:	**FINAL ORDER**
GEORGE KRAL	OAH Reference No.: 2022-ABC-05271 Agency Case No.: NOAP 2022-531-01917

The Board of Forestry, during a virtual meeting on May 16, 2022, by consensus issues this Final Order, which adopts and incorporates by reference the attached proposed order issued by Administrative Law Judge Kate Triana, on April 28, 2022. George Kral submitted exceptions to the proposed order and these were considered by the Board.

The Board of Forestry hereby Orders that:

1) The comments of the State Forester (issued through Stewardship Forester Eric Jacobs on March 23, 2022) in response to the statutory written plan and the plan for alternate practice (prepared by Stimson Lumber Company and dated February 24, 2022), which were prepared pursuant to ORS 527.670(3)(a) for an operation that occurs within 100 feet of a stream determined by the State Forester to be used by fish or for domestic use are AFFIRMED.

2) Appellant's request for attorney's fees and costs associated with this contested case hearing are DENIED. Bighorn Logging Corporation's request for attorney's fees and costs associated with this contested case hearing are DENIED.

Dated this 16th day of May, 2022

By: _____
Calvin Mukumoto
State Forester and
Secretary to the Board of Forestry

RIGHT TO JUDICIAL REVIEW

The comments of the board or of the State Forester concerning a written plan are not reviewable orders under ORS 183.480 as stated in ORS 527.700(6). No further review is available for the final order issued above.

OREGON DEPARTMENT OF FORESTRY

IN THE MATTER OF

George Kral

OAH Case No. 2022-ABC-05271
Agency Case No. NOAP 2022-531-01917

Oregon Department of Forestry's

Witness List and Exhibit Index

Exhibits A1 through A43

BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS

STATE OF OREGON
FOR THE
OREGON DEPARTMENT OF FORESTRY

IN THE MATTER OF:

GEORGE KRAL

DEPARTMENT OF FORESTRY'S EXHIBIT LIST

OAH Reference No.: 2022-ABC-05271
Agency Case No.: NOAP 2022-531-01917

No.	Date	Description	Pages	Off	Adm
A1	2022-Feb	OAR 629, Division 623 Shallow, Rapidly Moving Landslides and Public Safety	7		
A2	2022-01-03	ODF Inspection Report.pdf	1		
A3	2022-01-04	Agency Guidance: OAR 629, Division 630 Harvesting	96		
A4	2022-01-05	email from Buren with geotech review.pdf	3		
A5	2022-01-05	Guidance – ground-based operations on steep slope	6		
A6	2022-01-05	Nordhl_Geotech Map.pdf	1		
A7	2021-01-12	ODF Policy on OAR 629-605-0170.pdf	22		
A8	2022-01-25	ODF Inspection Report.pdf	1		
A9	2022-01-25	written plan for HLHL.pdf	4		
A10	2022-01-26	NOAP.pdf	6		
A11	2022-02-18	ODF Inspection Report.pdf	1		
A12	2022-02-18	Photo of main channel looking up slope by E.Jacobs	1		
A13	2022-02-23	ODF Inspection Report.pdf	1		
A14	2022-02-24	written plan for stream.pdf	4		
A15	2022-02-28	Nordgren Notes - Buren	1		
A16	2022-02-28	Nordgren Notes2 - Buren	1		
A17	2022-02-28	Nordgren Notes3 – Buren	1		
A18	2022-02-28	Nordgren Notes4 – Buren	1		
A19	2022-02-28	Ortho Review - Buren	1		
A20	2022-03-01	ODF Inspection Report.pdf	1		
A21	2022-03-02	ODF Inspection Report.pdf	1		
A22	2022-03-04	email from Buren with geotech review.pdf	3		
A23	2022-03-16	Public Comment 1_Small D and Alt Plan Nordgren	4		
A24	2022-03-16	Public Comment 2_Small D and Alt Plan Nordgren	1		
A25	2022-03-16	Public Comment 3_Small D and Alt Plan Nordgren	3		

No.	Date	Description	Pages	Off	Adm
A26	2022-03-23	Email & Maps from WRD for water intake	8		
A27	2022-03-23	RMA area cut along Type D stream	2		
A28	2022-03-23	SF Comments 22-01917.pdf	1		
A29	2022-04-01	email from Kral to Stimpson.pdf	2		
A30	2022-04-01	Kral hearing request.pdf	6		
A31	2022-04-05	OAH Referral.pdf	2		
A32	2022-04-06	email acknowledging hearing request.pdf	2		
A33	2022-04-06	letter acknowledging hearing request.pdf	1		
A34	2022-04-06	Notice of Contested Case Rights.pdf	6		
A35	2022-02-24	ODF Vantage Stimpson FG issue Map 1.1PG	1		
A36	2022-02-24	ODF Vantage Stimpson FG issue Map 2.1PG	1		
A37	2022-04-17	Slides.pdf	1		
A38	2022	ORS 527 statutes specific to hearing (published by SOS April 2022 downloaded)	6		
A39	April 2022	Curriculum Vitae of Keith Baldwin	2		
A40	April 2022	Curriculum Vitae of Michael R. Buren	2		
A41	2017-06-13	GeoScience, Inc. Debris Flow Risk Assessment	32		
A42	2019-01-24	Forest Practices Technical Note Number 2	11		
A43	2003-01-01	Forest Practices Technical Note Number 6	12		

The Oregon Department of Forestry reserves the right to modify or supplement this Exhibit List and to submit additional Exhibits for its case-in-chief and in rebuttal.

DATED this ____ of April , 2022.

Respectfully Submitted,

ELLEN F. ROSENBLUM
Attorney General

_____
Matt B. DeVore, #063103
Assistant Attorney General
Of Attorneys for Oregon Dept of Forestry

BEFORE THE OFFICE OF ADMINISTRATIVE HEARINGS
STATE OF OREGON
FOR THE
OREGON DEPARTMENT OF FORESTRY

IN THE MATTER OF:

GEORGE KRAL

DEPARTMENT OF FORESTRY'S WITNESS LIST

OAH Reference No.: 2022-ABC-05271
Agency Case No.: NOAP 2022-531-01917

Name of Witness	Scope of Testimony
Mike Cafferata,	District Forester
Eric Perkins	Unit Forester
Eric Jacobs	Stewardship Forester
Mike Buren,	Geotech
Keith Baldwin,	ODF Policy

The Oregon Department of Forestry reserves the right to modify or supplement this Witness List for its case-in-chief and in rebuttal.

DATED this ___ of April, 2022.

Respectfully Submitted,

ELLEN F. ROSENBLUM
Attorney General

_____
Matt B. DeVore, #063103
Assistant Attorney General
Of Attorneys for Oregon Dept of Forestry

CERTIFICATE OF SERVICE

I hereby certify that on April ___, 2022, I submitted the DEPTARTMENT OF FORESTRY'S WITNESS LIST, EXHIBIT LIST, AND EXHIBITS A## to A##, to the Office of Admin. Hearings by:

Upload to OAH portal at https://empportal.emp.state.or.us/.
Email to OAH at oed_oah_referral@employ.oregon.gov

I hereby certify that on April ____ , 2022, I served a true and exact copy of the above listed documents, on the parties by email:

George Kral 4036 NW Half Mile Ln Forest Grove OR 97116 george@schollsvalley.com	Matthew Denley Cummins, Goodman, Denley & Vickers P.C Attorney for Bighorn Logging PO Box 609 Newberg OR 97132 MFD@cumminsgoodman.com
Stimson Lumber Company Scott Gray 49800 SW Scoggins Valley Rd Gaston OR 97119 sgray@stimsonlumber.com mmckibbin@stimsonlumber.com tshiel@stimsonlumber.com	Greg Wagenblast, Agency Representative Department of Forestry, Private Forests 2600 State St Bldg D Salem OR 97310 Email

DATED this ___ day of April, 2022.

_____
Matthew B. DeVore, OSB #063103
Assistant Attorney General

Chapter 629

Division 623
SHALLOW, RAPIDLY MOVING LANDSLIDES AND PUBLIC SAFETY

629-623-0000
Purpose

(1) Shallow, rapidly moving landslides may be a public safety risk affected by forest operations. There is a high natural landslide hazard in certain locations. In the short term, forest practices regulations can reduce the risk to people who are present in locations prone to shallow, rapidly moving landslides. In the long term, effective protection of the public can only be achieved through the shared responsibilities of homeowners, road users, forestland owners, and state and local governments to reduce the number of persons living in or driving through locations prone to shallow, rapidly moving landslides during heavy rainfall periods.

(2) OAR 629-623-0000 through 629-623-0800 shall be known as the shallow, rapidly moving landslide and public safety rules.

(3) The purpose of the shallow, rapidly moving landslides and public safety rules is to reduce the risk of serious bodily injury or death caused by shallow, rapidly moving landslides directly related to forest practices. These rules consider the exposure of the public to these safety risks and include appropriate practices designed to reduce the occurrence, timing, or effects of shallow, rapidly moving landslides.

(4) These rules are based on the best scientific and monitoring information currently available. The department will continue to monitor factors associated with shallow, rapidly moving landslides and also review new research on this issue. The department will recommend rule changes if this new information suggests different forest practices may be appropriate.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5) & 527.714
History:
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

629-623-0100
Screening for High Landslide Hazard Locations and Exposed Population

Screening for High Landslide Hazard Locations and Exposed Population

(1) The State Forester will use further review area maps and/or other information to screen proposed operations for high landslide hazard locations that may affect exposed populations. Operators are encouraged to acquire available maps and other information and to conduct their own public safety screening.

(2) Upon notification by the State Forester, operators shall identify portions of the operation that contain high landslide hazard locations and shall also identify structures and paved public roads within further review areas below the operation area.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5) & 527.714
History:
DOF 2-2013, f. 7-11-13, cert. ef. 9-1-13
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

629-623-0200
Exposure Categories

(1) The State Forester will verify the information provided by operators in OAR 629-623-0100 and use this information to determine the exposure category for the operation.

(2) Exposure Category A includes habitable residences, schools, and other buildings where people are normally present during periods when wet season rain storms are common.

(3) Exposure Category B includes paved public roads averaging over 500 vehicles per day as determined, if possible, during periods when wet season rain storms are common.

(4) Exposure Category C includes barns, outbuildings, recreational dwellings not included in Exposure Category A, low-use public roads, and other constructed facilities where people are not usually present when wet season rain storms are common.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5) & 527.714
History:
DOF 2-2013, f. 7-11-13, cert. ef. 9-1-13
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

629-623-0250
Shallow, Rapidly Moving Landslide Impact Rating

(1) The State Forester will publish technical guidance for evaluating and rating shallow, rapidly moving landslide impact potential for any exposed population. Impact rating factors may include, but are not limited to: the location of the structure or road in relationship to the debris torrent-prone stream or steep slope; channel confinement; channel gradient; channel junction angles; and debris in the channel.

(2) Shallow, rapidly moving landslide impact potential is rated as unlikely, moderate, serious and in limited cases, extreme.

(3) The State Forester may require the landowner to submit a geotechnical determination of shallow, rapidly moving landslide impact rating for the proposed operation.

(4) The impact rating may include the potential for the failure of a structure in the direct path of a rapidly moving landslide resulting in a substantial risk of serious bodily injury or death to the exposed population below that structure.

(5) The State Forester will make the final impact rating.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5) & 527.714
History:
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

629-623-0300
Public Safety Risk Levels

(1) The exposure categories described in OAR 629-623-0200 and the impact rating described in 629-623-0250 are used to determine the downslope public safety risk level and the applicable forest practice rules that apply to the operation, as described in Sections (2) through (10) of this rule.

Substantial downslope public safety risk

(2) For Exposure Category A, substantial downslope public safety risk exists if the impact rating is extreme or serious.

(3) For Exposure Category B, substantial downslope public safety risk exists if the impact rating is extreme and the State Forester informs the operator that these site specific conditions warrant substantial public safety risk practices.

(4) Substantial Downslope Public Safety Risk operations are regulated by OARs 629-623-0400, 629-623-0450, 629-623-0600, and 629-623-0700.

Intermediate downslope public safety risk

(5) For Exposure Category A, intermediate downslope public safety risk exists if the impact rating is moderate.

(6) For Exposure Category B, intermediate downslope public safety risk exists if the impact rating is serious.

(7) For Exposure Category C, intermediate downslope public safety risk exists if the impact rating is extreme and the State Forester informs the operator that these site specific conditions warrant intermediate public safety risk practices.

(8) Intermediate Downslope Public Safety Risk operations are regulated by OARs 629-623-0500, 629-623-0550, 629-623-0600, 629-623-0700, and 629-630-0500.

Low downslope public safety risk

(9) All other operations not described in sections 2, 3, 5, 6 and 7 of the rule are determined to have low downslope public safety risk.

(10) Low Downslope Public Safety Risk operations are regulated by OAR 629-630-0500and by OAR 629-625-0000 through 0700 and all other applicable rules.

Applicability of regulations and use of leave trees

(11) As required by ORS 195.256(4), forest practice rules shall not apply to risk situations arising solely from the construction of a building permitted under ORS 195.260(1)(c).

(12) Leave trees required to comply with timber harvesting rules for shallow, rapidly moving landslides and public safety may also be used to comply with ORS 527.676 except those required to be retained in riparian management areas by OAR 629-642-0000 through 629-642-0800.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5) & 527.714
History:
DOF 1-2017, f. 6-9-17, cert. ef. 7-1-17
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

629-623-0400
Restriction of Timber Harvesting — Substantial Public Safety Risk

(1) Operators shall not remove trees from high landslide hazard locations with substantial downslope public safety risk unless a geotechnical report demonstrates to the State Forester that any landslides that might occur will not be directly related to forest practices because of very deep soil or other site-specific conditions. Removal of dead or diseased trees or trees from sites that have already failed is allowed if the operator demonstrates to the State Forester that the operation results in no increased overall downslope public safety risk.

(2) Operators shall leave a sufficient number and arrangement of trees adjacent to high landslide hazard locations to reduce the likelihood of trees retained in these locations blowing down.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5) & 527.714
History:
DOF 2-2013, f. 7-11-13, cert. ef. 9-1-13
Reverted to DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03
DOF 4-2008(Temp), f. 7-11-08, cert. ef. 7-18-08 thru 1-13-09
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

629-623-0450
Restriction of Road Construction — Substantial Public Safety Risk

(1) Operators shall not construct new roads on high landslide hazard locations or other very steep slopes with substantial downslope public safety risk.

(2) Operators may reconstruct existing roads in high landslide hazard locations when the written plan required by OAR 629-623-0700 incorporates site-specific practices as directed by a geotechnical specialist and demonstrates that road reconstruction will reduce landslide hazard.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5) & 527.714
History:
DOF 8-2005, f. 12-13-05, cert. ef. 1-1-06
DOF 6-2005(Temp), f. & cert. ef. 8-2-05 thru 1-27-06
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

629-623-0500
Timber Harvesting — Intermediate Public Safety Risk

(1) The purpose of this rule is to manage canopy closure on high landslide hazard locations with intermediate downslope public safety risk.

(2) For harvesting operations that remove all or most of the largest trees, operators shall ensure that no more than half the area of high landslide hazard locations on a single ownership within the drainage or hillslope directly above the affected structure or road are in a 0 to 9 year-old age class or with reduced canopy closure in other age classes;

(3) For thinning or partial cutting operations, operators shall retain a vigorous stand that allows rapid canopy closure.

(4) Landowners shall use reforestation and stand management practices that result in rapid canopy closure.

(5) For timber harvesting operations, landowners shall describe in the written plan required by OAR 629-623-0700 how they will manage the high landslide hazard locations on their ownership within the affected drainage or hillslope with intermediate downslope public safety risk.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5) & 527.714
History:
Reverted to DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03
Suspended by DOF 4-2008(Temp), f. 7-11-08, cert. ef. 7-18-08 thru 1-13-09
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

629-623-0550

Road Construction — Intermediate Public Safety Risk

(1) When constructing roads on high landslide hazard locations or other very steep slopes with intermediate downslope public safety risk, operators shall follow site-specific practices as directed by a geotechnical specialist.

(2) In addition to the road construction and maintenance rules in OAR 629-625-0100 through 629-625-0440, written plans shall include:

(a) An evaluation of cutslope stability that demonstrates major cutslope failure is very unlikely; and

(b) A description of measures to be taken to prevent water from draining onto high landslide hazard locations.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5), 527.674 & 527.714
History:
DOF 8-2005, f. 12-13-05, cert. ef. 1-1-06
DOF 6-2005(Temp), f. & cert. ef. 8-2-05 thru 1-27-06
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

629-623-0600

Protection Along Debris Torrent-Prone Streams

(1) The purpose of this rule is to reduce or eliminate woody debris loading, and to retain large standing trees in locations where they might slow debris torrent movement along debris torrent-prone streams with substantial or intermediate downslope public safety risk.

(2) During timber harvesting operations, operators shall fell and yard trees in a manner to minimize slash and other debris accumulations in debris torrent-prone stream channels where there is substantial or intermediate downslope public safety risk.

(3) Operators shall remove logging slash piles and continuous logging slash deposits from debris torrent-prone stream channels where there is substantial or intermediate downslope public safety risk.

(4) Operators shall leave, and during felling and yarding activity, protect large standing trees along the likely depositional reaches of debris torrent-prone streams, as determined by the State Forester, in locations where there is substantial or intermediate downslope public safety risk. Leave trees shall:

(a) Be larger than 20 inches in diameter breast height;

(b) Be within 50 feet of the edge of the active channel along both sides of the stream;

(c) Be left for a distance of 300 feet or the depositional length of the channel, whichever is less, as measured from the beginning of the forested portion of the stream reach above the road or structure;

(d) Not include trees that pose a greater public safety risk because of windthrow or other risks as determined by the State Forester.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5) & 527.714
History:
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

629-623-0700

Written Plans to Evaluate Public Safety Risk

(1) To allow evaluation of public safety risk and the appropriate methods for reducing this risk, operators shall submit a written plan for all timber harvesting or road construction operations with intermediate or substantial downslope public safety risk as described in OAR 629-623-0300. Written plans shall include:

(a) A determination of public safety risk (OAR 629-623-0300);

(b) A map showing those portion(s) of the operation containing high landslide hazard locations;

(c) The location of all existing and proposed new roads crossing high landslide hazard locations;

(d) A detailed road design for all new or reconstructed roads crossing high landslide hazard locations;

(e) The location of habitable structures (Exposure Category A) and paved public roads (Exposure Category B) below the operation and within further review areas;

(f) Locations where timber harvesting will not occur;

(g) Locations where partial cutting will occur and the specific silvicultural prescription; and

(h) Additional information related to the operation as requested by the State Forester.

(2) Operators shall submit a written plan for proposed stream crossing fills constructed across debris torrent-prone streams with substantial or intermediate downslope public safety risk.

(3) Operators shall submit a written plan for proposed waste fill areas within a drainage containing debris torrent-prone streams where there is substantial or intermediate downslope public safety risk.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5), 527.674 & 527.714
History:
DOF 8-2005, f. 12-13-05, cert. ef. 1-1-06
DOF 6-2005(Temp), f. & cert. ef. 8-2-05 thru 1-27-06
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

629-623-0800

Hazard Mitigation and Risk Reduction Projects

(1) Completed landslide mitigation projects can be used to lower the shallow, rapidly moving landslide impact rating as described in OAR 629-623-0250.

(a) The landowners who own structures and are directly affected by the impact rating must agree to landslide mitigation.

(b) Structural measures designed and inspected by a geotechnical specialist are the preferred mitigation strategy.

(2) Landowners may remove trees on high landslide hazard locations above habitable structures or paved public roads where the public safety risk from trees blowing over is equal to or higher than the public safety risk from landslides. Supporting evidence for removing these trees must be included in the written plan required by OAR 629-623-0700.

(3) A homeowner may submit evidence in the form of a risk management plan to the State Forester to lower the exposure category (OAR 629-623-0200) from Exposure Category A to Exposure Category B. Risk management plans shall include:

(a) An evacuation plan that substantially reduces the risk to residents and visitors during periods when shallow, rapidly moving landslides may occur;

(b) A copy of the property title showing full disclosure of the elevated landslide hazard on that property, including a statement that it is the homeowner's responsibility to inform residents and visitors of the elevated landslide hazard and of the necessity to comply with the evacuation plan;

(c) Assumption by the homeowner of all liability for injury and property damage associated with shallow, rapidly moving landslides initiating within the operation; and

(d) The signatures of the homeowner and of a notary public.

Statutory/Other Authority: ORS 527.710(10)
Statutes/Other Implemented: ORS 527.630(5) & 527.714
History:
DOF 13-2002, f. 12-9-02 cert. ef. 1-1-03

Oregon Department of Forestry
Forest Activity Inspection Report

A **Forest Practices Inspection** was conducted on **2022-531-01917**

Operation Name: NORDGREN HL

Inspection Date: 1/3/2022

Operation Status: Pre-operation

ODF Contact Details:

Inspected by: Eric Jacobs

eric.d.jacobs@odf.oregon.gov

ODF Office: Forest Grove

801 Gales Creek Rd
Forest Grove, Oregon 97116
(503) 357-2191

NOAP Contact Details:

Notifier: Samuel A Howard | Stimson Lumber Company

Landowner(s): Samuel A Howard | Stimson Lumber Company

Timber Owner: Samuel A Howard | Stimson Lumber Company

Unit:	Activity:	Operator:
NORDGREN HL	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.

Operations observed were **in compliance** at the time of this inspection.

Inspection Notes:

Pre-operation inspection with ODF geotechnician to review HLHL areas and public safety risk.

DIVISION 630
HARVESTING

PURPOSE
OAR 629-630-0000

(1) Harvesting of forest tree species is an integral part of forest management by which wood for human use is obtained and by which forests are established and tended.

(2) Harvesting operations result in a temporary disturbance to the forest environment.

(3) The purpose of the harvesting rules is to establish standards for forest practices that will maintain the productivity of forestland, minimize soil and debris entering waters of the state, and protect wildlife and fish habitat.

(4) OARs 629-630-000 through 629-630-800 shall be known as the harvesting rules.

(5) The harvesting rules shall apply to all forest practices regions unless otherwise indicated.

APPLICATION:

This rule is the division 630 purpose statement and is not used for enforcement. Take enforcement action under OAR 629-630-0100 through 0800.

ADMINISTRATION:

This rule provides the broad framework for the remainder of the harvesting rules.

Notification requirement for salvage operations resulting from flood events are not required for processed logs, which are free of limbs and have been bucked on both ends. Downed wood within the riparian management area (RMA), not void of limbs and/or not bucked on both ends, are under the FPA jurisdiction. See OAR 629-642-0100(3), -0105(7) and -0400(3), OAR 629-645-0050 and OAR 629-650-0040. An approved plan for an alternate practice (PFAP) is required to remove downed wood from an RMA for safety or fire hazards, OAR 629-605-0500.

Definitions Used in Division 630

"Effective drainage and filtration" means water bars or other diversions that direct drainage water onto soils (not ponding water on the skid trail) where sediment can be filtered before it enters waters of the state.

"Erosion-prone slopes" means surface erosion (think rills and gullys) where there is decomposed granites or real sandy soil.

"Equipment tracks" from ground-based equipment use on tethered or cable-assist operations are considered "skid trails" for rule interpretation and guidance.

"Slash" for the purposes of OAR 629-630-0600, means any tree tops, limbs, remnants of cut brush and sections of tree trunks, all less than four inches in diameter on the small end or less than ten feet long, and the like that remain after felling, limbing, bucking and yarding. Any larger and longer material will be considered "large wood," which is valuable as aquatic and upland wildlife habitat.

"Skid roads" are constructed skid trails that generally follow the contour and are used by many skid trails to yard logs to the landing. Constructing skid roads on steep slopes often requires cutting and sidecasting, increasing the disturbed area and stripping off the more productive surface soils leaving less productive subsoils (mineral soils).

"Skid trails" means any area where ground-based equipment conducting yarding operations makes multiple equipment passes to the extent that ground surface disturbance is visible. A single ground-based equipment pass is not considered a skid trail unless ground surface conditions are such that there is evidence of compaction, exposure of subsoil, or visible ruts.

"Soil compaction" means surface soil grains are rearranged and compressed, decreasing void spaces (loose spaces) by repeated ground-based equipment use of skid trails.

"Soil deterioration" means adverse soil disturbance such that the potential for growing trees is reduced substantially or water movement would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Examples of soil deterioration by ground-based equipment in order of severity are soil compaction, soil puddling and soil displacement.

"Soil displacement" means surface soil is moved laterally from narrow ruts or wider areas, altering water infiltration and accumulation patterns or surface soils are partly removed or mixed with subsoils (mineral soils). Severe disturbance if surface soil is removed and subsoil puddles.

"Soil puddling" means surface soil becomes a slurry by the churning or kneading action from ground-based equipment operating during wet soil conditions. Subsoil have become compacted.

"Steep slopes" means slopes that exceed 60 percent. Steep slopes may exceed 40 percent where soils consist of decomposed granite-type materials or other highly erodible materials as determined by the State Forester, OAR 629-630-0150(2) and (3).

<u>SKIDDING AND YARDING PRACTICES</u> OAR 629-630-0100

(1) For each harvesting operation, operators shall select a logging method and type of equipment appropriate to the given slope, landscape, and soil properties in order to minimize soil deterioration and to protect water quality.

APPLICATION:

Section (1) can be used for enforcement action if none of the following sections is a better fit. Where soil productivity is a concern, OAR 629-630-0100(1) and (2) are related. Use section (2) where most of the disturbed soils are considered unstable, wet, or easily compacted. Use section
(1) where most of the disturbed soils do not fall into those classifications.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when the operator uses harvesting method(s) that are not suited to minimize soil deterioration and protect water quality, which causes soil compaction, soil puddling or soil displacement, as described below under "soil deterioration." An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Note: OAR 629-670-0115(1)(c), and it could have been prevented by using "accepted management practices," OAR 629-670-0105(5)(b).

Damage: There is damage when an unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage when adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. There is damage when there is adverse disturbance of more than 20 percent of the ground in the harvest unit. Refer to "soil deterioration" below.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to rip or subsoil the disturbed areas, mulch, grass seed, or other measures to improve water drainage and minimize the entry of sediment into streams. Consult supervisors and the Forest Practices Field Coordinator before using section (1) for enforcement.

ADMINISTRATION:

Section (1) is the purpose statement for falling and yarding practices. Use section (1) as an initial and on-going evaluation of the effects of the entire logging operation (at the unit level) on soil deterioration, site productivity, and water quality.

Planning. Operators should select the felling and harvesting methods / equipment suited to conditions of slope, landscape, and soil type to limit soil deterioration and erosion as much as is practical.

- Cable yarded is a logging method that can take advantage of steep terrain, provided there are adequate opportunities for tailholds that provide the cable line deflection to minimize log gouging on yarding turns. For most harvest units, uphill cable yarding provides better protection. Downhill cable yarding tends to increase down slope soil movement and concentrate surface drainage on landings and other exposed soils. See also section (6).
- Ground-based methods (tethered or untethered) should recognize local erosion-prone soils and historic slides, while considering the following: using gentler portions of the slope for skid trails, using natural slope changes for drainage, re-using existing skid trails, adding slash to skid trails, using wide tracked equipment (not rubber tired), designating routes to avoid headwalls, unstable slopes, drainages and wet areas, and reducing activity during wet periods. \
- Combinations of felling using ground-based equipment and cable yarding on steep slopes provide year-round opportunities to minimize soil disturbance.

An approved PFAP that provides "equal or better" resource protection is required to use tethered ground-based equipment for operational activities on steep slopes where there is not "intermediate" or "substantial" downslope public safety risk. The PFAP template example can be found on ODF public webpage under publications for modifying the following rules:

- Within 100 feet of any stream channel, regardless if water is present, OAR 629-630- 0150(5).
- On all high landslide hazard locations, OAR 620-630-0500(1).

Note: The Stewardship Forester (SF) should consult the ODF geotechnical specialist if there are suspected downslope public safety exposure, including "low" downslope public safety risk, even if slopes are less than the high landslides hazard locations (HLHL) slope thresholds.

Example: An approved PFAP for tethered cutting or yarding could allow cutting within the 100- foot distance from any stream, but not within 30 feet. In some situations, it may be acceptable to allow cutting to the edge of the stream channel. Generally, there is a greater risk for soil disturbance on HLHL for tethered cutting and yarding operations, rather than tethered cutting and cable yarding operations.

"Soil deterioration" means adverse soil disturbance such that the potential for growing trees is reduced substantially or water movement would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Operating ground- based equipment during wet soil conditions will increase evidence of soil deterioration.
Examples of soil deterioration by ground-based equipment in order of severity:

1. "Soil compaction" means surface soil grains are rearranged and compressed, decreasing void spaces (loose spaces) by repeated ground-based equipment use of skid trails.

2. "Soil puddling" means surface soil becomes a slurry by the churning or kneading action from ground-based equipment operating during wet soil conditions. Subsoil have become compacted.

3. "Soil displacement" means surface soil is moved laterally from narrow ruts or wider areas, altering water infiltration and accumulation patterns or surface soils are partly removed or mixed with subsoils (mineral soils). Severe disturbance if surface soil is removed and subsoil puddles.

Note: Disturbed soils which have been correctly sub-soiled (where appropriate), stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration. Evaluate the adequacy of soil deterioration control on the basis of the signs of soil sensitivity to harvesting practices, the evidence of soil deterioration, and on the availability of practical preventive methods. Survey the entire unit for evidence of "deteriorated soil".

Calculating 20% disturbance for this rule means calculating the amount of soil deterioration on the total area of steep slopes, erosion prone slopes and HLHL areas within the unit (both cable and ground-based activity areas).

Drainage on slopes **over 35 percent** is especially critical, and erosion control measures should be completed before large storms or the rainy season. Refer to OAR 629-630-0300 for guidance on drainage.

The definition of waters of the state include stream, which means a channel that carriers water sometime in the year, OAR 629-600-0100. Wet and dry channel require measures to protect water quality.

<u>SKIDDING AND YARDING PRACTICES</u> OAR 629-630-0100

(2) Operators shall avoid ground based yarding on unstable, wet, or easily compacted soils unless operations can be conducted without damaging soil productivity through soil disturbance, compaction or erosion.

<u>APPLICATION</u>:

Section (2) can be used for enforcement. Where soil productivity is a concern, OAR 629-630-0100(1) and (2) are related. Use section (2) where most of the disturbed soils are considered unstable, wet, or easily compacted. Use section (1) where most of the disturbed soils do not fall into those classifications.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition exists when ground-based equipment disturbance threatens to produce major soil displacement, deep compaction, or extensive erosion. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

<u>Damage</u>: Damage occurs when the unsatisfactory condition results in major displacement, deep compaction, or extensive erosion. There is damage when adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. There is damage when an unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly sub-soiled (where appropriate), stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Adverse disturbance of more than 20 percent of the surface ground in the harvest unit is considered damage.

<u>Written Statement of Unsatisfactory Condition</u>: Issue a written statement of unsatisfactory condition when ceasing yarding, corrective action, or complete repair is feasible and practical prior to any more than a minor amount of damage occurring. Direct mechanical subsoiling or ripping the disturbed areas when soils are not wet, mulch, grass seeding, or other measures to improve water drainage and minimize the entry of sediment into streams.

ADMINISTRATION:

Section (2) prohibits ground-based yarding on unstable, wet, or easily compacted soils that would damage soil productivity through disturbance, compaction, or erosion. Operators are responsible to plan and operate carefully as needed to meet the objective to protect soil productivity.

For example, an operation map shows exclusion areas that are problematic because of unstable terrain or wet areas. When it appears that skid trail disturbance on a harvest unit will exceed the 20 percent limit, the SF should notify the operator and recommend corrective action with a Written Statement of Unsatisfactory Condition if appropriate.

Identification of damage or potential damage associated with violation of section (2) is usually difficult. Refer to the guidance in section (1).

Note: Operating ground-based equipment during wet soil conditions will increase evidence of soil compaction, soil puddling and soil disturbance.

***SKIDDING AND YARDING PRACTICES* OAR 629-630-0100**

(3) Operators shall locate skid trails where sidecasting is kept to a minimum.

APPLICATION:

Section (3) can be used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when skid trail sidecast material threatens to cover productive soil over a significant percentage of the unit. An unsatisfactory condition exists when sidecast material is likely to cause slides which will remove productive surface soil from the slope. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory conditions reach proportions that could have been practically limited. There is damage when adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Damage occurs when the combination of slope which has been covered by sidecast and slides from sidecast and ground excavated for the skid road (road plus the cut) exceeds more than 20 percent of the ground in the unit.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when excessive sidecast-related soil disturbance is threatening or just beginning, but major damage has not yet occurred and the unsatisfactory condition can be immediately corrected. Direct the operator to pullback sidecast and place it in the skid road or other stable location, after the operation but prior to the rainy season is generally sufficient.

ADMINISTRATION:

Section (3). Operators must limit disturbance by fitting ground-based skid trails to the topography, limiting the area covered by excavation and sidecast, and avoiding sidecasting that is likely to cause landslides. Encourage operators to plan and mark skid trails in advance of construction and use. **Note:** Advise operators to avoid side casting new material on top of old sidecast when "opening up" previously constructed skid trails, which may result in unexpectedly deep sidecast.

Excessive sidecast generally means sidecast depth of three feet or more on slopes between 50 percent and 65 percent and two feet or more on slopes over 65 percent. When evaluating sidecast stability, the SF must consider slope, sidecast depth, extent and soil type, since strength and susceptibility to erosion vary by soil type. Sidecast depth is more about triggering an underlying slope failure (failure surface below the sidecast including natural ground). It's a weight issue, not a surface erosion issue. Consult ODF's Geotechnical Specialist if more information on sidecast stability is needed.

Sidecast that results in a single small landslide or a few scattered small landslides will not automatically constitute damage under section (3), provided that overall disturbance of the activity area does not exceed 20 percent of the ground in the unit. If waters are affected or threatened, other harvesting rules will usually also apply.

<u>SKIDDING AND YARDING PRACTICES</u> OAR 629-630-0100

(4) Operators shall locate skid trails on stable areas so as to minimize the risk of material entering waters of the state.

<u>APPLICATION</u>:

Section (4) can be used for enforcement.

This section applies to skid trails on steep but otherwise stable slopes. In most situations, OAR 629-623, OAR 629-630-0150, or OAR 629-630-0500 will better fit the circumstances because there are HLHL as defined in OAR 629-600-0100 or steep or erosion-prone slopes, as described in OAR 629-630-0150(2) and (3). Use section (3) only on the remaining steep, but stable sites that are end-hauled or where sidecast is limited and will not enter waters.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition exists when any skid trail is located near a stream or on steep slopes which pose a risk of fill or sidecast material entering waters of the state. An unsatisfactory condition exists when skid trails are located on slopes where serious erosion is likely despite efforts to provide drainage. An unsatisfactory condition exists when preventable sediment or debris has entered or is likely to enter the stream channel or waters of the state.

<u>Damage</u>: There is damage when an unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage when adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

<u>Written Statement of Unsatisfactory Condition</u>: Issue a written statement of unsatisfactory condition when repairs are feasible and practical and can be completed prior to damage occurring. Direct the operator to pullback any unstable sidecast and place it in a stable location, or to install drainage structures as necessary to prevent surface erosion, or to vacate and stabilize any skid trails or landings located on unstable slopes.

ADMINISTRATION:

Section (4) is intended to prohibit landings, skid trails and fire trails from being located on steep slopes or landslide-prone locations where likely to either destabilize the slopes or cause major erosion (gullies).

Locations which are not stable for skid trails (conventional ground-based harvesting activities) include:

1. Actively moving landslides;
2. HLHL (as defined in OAR 629-600-0100);
3. All slopes steeper than **60 percent**; or
4. Erosion-prone slopes (very sandy, decomposed granitics, and ash) which are steeper than **40 percent**.

After intense fire, stability is further reduced. As a rule of thumb, the slopes listed above should be **reduced by ten percent after an intense fire** to determine the maximum stable slope for ground-based harvesting (felling and yarding).

When damage from skid trails and fire trails is due to surface erosion which could have been prevented by water bars or other drainage structures, take enforcement action under OAR 629-630-0300.

***SKIDDING AND YARDING PRACTICES* OAR 629-630-0100**

(5) Operators shall avoid excavating skid trails on slumps or slides.

APPLICATION:

Section (5) can be used for enforcement. The section applies when ground yarding is used on units with slumps or slide terrain. However, in most situations, OAR 629-623, OAR 629-630-0150, or OAR 629-630-0500 will fit the situation better. Use section (5) only on the remaining sites, that is, where there are no HLHL and no steep or erosion-prone slopes (as described in OAR 629-630-0150(2) and (3)).

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when operators excavate skid trails (including re-excavation of existing skid trails) on slumps or slides. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: There is damage when an unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope.

Damage also occurs when the unsatisfactory condition results in reactivation of slumps or slides, adversely affecting soil productivity over a significant portion of the harvest unit. Adverse disturbance of more than 20 percent of the ground in the harvest unit is considered damage. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Excavating skid trails on slumps or slides without an approved PFAP is considered a violation of section (5). The rule of thumb here is: if the SF recognized the site as a slide area, then the operator and landowner also should have recognized it.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when skidding may, or has occurred across slumps or slides but no skid trail excavation has been done. Direct the operator to pullback any unstable sidecast and place it in a stable location, or to install drainage structures as necessary to prevent surface erosion, or to vacate and stabilize any skid trails or landings located on unstable slopes.

ADMINISTRATION:

Section (5) is intended to prohibit skid trail construction on slumps or slides. Operators are responsible to plan and operate carefully as needed to meet the objective to protect soil productivity. For example, an operation map shows exclusion areas that are problematic because of slumps or slides. Skid trail construction will usually alter drainage, over steepen the slope, and/or load the slope. Such alterations can reactivate slope movement. Damage to downslope water quality or aquatic habitat is a likely result.

There are situations where skidding across slumps or slides is a reasonable practice Consult the ODF Geotechnical Specialist before approving a PFAP for such situations.

***SKIDDING AND YARDING PRACTICES* OAR 629-630-0100**

(6) Operators shall limit cable logging to uphill yarding whenever practical. When downhill cable yarding is necessary, operators shall use a layout and system which minimizes soil displacement.

APPLICATION:

Section (6) can be used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when downhill cable yarding is used and there is inadequate deflection to lift at least one-end of the logs off the ground over a substantial portion of the unit. Examples of unsatisfactory conditions are:

1. At least partial suspension has not been achieved for most of the length of the yarding roads.
2. Deep and extensive gouging of the soil surface on slopes which concentrates water, preventing sediment filtering before entering waters of the state.
3. Yarding roads have displaced soil to the extent of burying surface layers and exposing less productive subsoil (mineral soils).

Damage: Damage occurs when the unsatisfactory condition results in adverse soil displacement over a significant portion (over 20 percent) of the unit.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when an unsatisfactory condition is observed prior to damage. Direct the operator to cease yarding and adjust yarding practices before continuing.

ADMINISTRATION:

Section (6) requires operator, when downhill cable yarding systems are used, to do whatever is necessary to limit soil displacement and prevent soil erosion. When cable yarding, the operator must use a system that adequately protects soil productivity and water quality. For most harvest units, uphill cable yarding provides better protection. Downhill cable yarding tends to increase down slope soil movement and concentrate surface drainage on landings and other exposed soils. See also guidance for OAR 629-630-0500 and OAR 629-623-0400 and -0500.

Although uphill cable yarding is generally preferred, downhill cable yarding may be appropriate in some situations. Several examples of these situations are:

- When downhill cable yarding leads to lower overall impact on soils and water quality. For example, when road construction across a high landslide hazard location would be needed for use of an uphill system a well-designed downhill layout may provide better resource protection.

- When cable systems for yarding small logs are designed as downhill systems. These systems are acceptable provided that they meet the resource protection standards described in this guidance.

- When the operator has no practical alternative to downhill yarding, even though uphill yarding would provide better resource protection. The SF should be satisfied that the operator has exhausted all reasonable alternatives, including attempting to gain access over adjacent ownership. Special measures may be needed to protect soils and water quality. The SF may consult district supervisory staff and Forest Practices Field Coordinator if it appears that downhill yarding could degrade soils or waters of the state and there appears to be no reasonable alternative.

<u>GROUND-BASED HARVESTING ON STEEP OR EROSION-PRONE SLOPES</u> OAR 629-630-0150

(1) The purpose of this rule is to reduce the potential for erosion from steep or erosion-prone slopes to enter waters of the state.

<u>APPLICATION</u>:

Section (1) cannot be used for enforcement. It is the purpose statement for OAR 629-630-0150. Sections (4) through (9) of this rule describe specific protection standards used for enforcement.

<u>ADMINISTRATION</u>:

The purpose of this rule is to reduce erosion from steep or erosion-prone slopes into waters of the state. Use OAR 629-630-0100 Skidding and Yarding Practices to address situations where soil disturbance from yarding equipment affects soil productivity. OAR 629-630-0150 applies to slopes that are steep or erosion-prone but are not HLHL.

"Erosion-prone slopes" means surface erosion (think rills and gullys) where there is decomposed granites or very sandy soil.

When HLHL are present, use the following rules for enforcement:

- OAR 629-623-0000 through 0800, Shallow, Rapidly Moving Landslides and Public Safety
- OAR 629-630-0500, Harvesting on High Landslide Hazard Locations

<u>GROUND-BASED HARVESTING ON STEEP OR EROSION-PRONE SLOPES</u> OAR 629-630-0150

(2) Slopes over 60 percent are subject to the requirements of Sections (4) through (9) of this rule.

(3) Slopes over 40 percent where soils consist of decomposed granite-type materials, or other highly erodible materials as determined by the State Forester, are considered erosion-prone and subject to the requirements of Sections (4) through (9) of this rule.

<u>APPLICATION</u>:

Sections (2) and (3) cannot be used for enforcement.

<u>ADMINISTRATION</u>:

OAR 629-630-0150 applies to slopes considered "steep" or "erosion-prone." Under section (2), "steep slopes" are slopes that are steeper than 60 percent gradient but are not HLHL. Operators are expected to be aware of these slopes in their operation unit.

Under section (3), "erosion–prone slopes" are slopes that are steeper than 40 percent (but not HLHL) that have either decomposed granitic soils or other soils that are determined by the State Forester to be highly erodible. Decomposed granitic soils are generally limited to a band running south from near Roseburg, through Grants Pass, to near Ashland; maps and GIS layers showing the locations of these soils are available. Operators are expected to be aware of mapped decomposed granitic soils in their operation unit.

"Other highly erodible materials as determined by the State Forester" include:

- Soils that have become highly erodible after intense wildfire, or
- Soils on slopes with a history of surface erosion problems.

Note: The November 7, 2018 FPA guidance for ground-based operations on steep slopes acknowledged that OAR 629-630-0150 also applies to HLHL where there is an approved PFPA.

Consult with ODF's Geotechnical Specialist when considering whether to apply the rule in this manner. The department must notify the operator for this rule to apply on "other highly erodible materials."

Steep slopes over 60% may be viewed on ODF's Vantage and FERNS platforms. Lidar imagery is available on Vantage.

<u>GROUND-BASED HARVESTING ON STEEP OR EROSION-PRONE SLOPES</u> OAR 629-630-0150

(4) Methods that avoid development of compacted or excavated trails are the preferred alternative for operating on steep or erosion-prone slopes. If the operation will result in excavated or compacted skid trails, operators shall apply sections (5) through (9) of this rule.

<u>APPLICATION</u>:

Section (4) cannot be used for enforcement.

<u>ADMINISTRATION</u>:

<u>Yarding Systems and Requirements</u>. Where steep or erosion-prone slopes are identified based on sections (2) and (3) of this rule, operators should always first consider yarding methods that do not result in excavated or compacted skid trails. The most common alternative yarding method is cable yarding, but other methods may be effective. In their analyses, operators and landowners may determine that these systems are not feasible. Reasons for this determination could be economic (high costs, low timber value, or other considerations) or operational (cable systems won't work in the situation, the operator has no access to cable systems, or other factors).

Note: The yarding system decision is up to the operator and landowner, not the SF, although the SF can provide advisory input. However, when operators use any yarding system that will result in excavated or compacted skid trails on steep or erosion-prone slopes, they must meet or exceed the protection standards in sections (5) through (9) of this rule. The requirements in sections (5) through (9) apply to existing skid trails only if new excavation or fill is needed.

Note: Operating ground-based equipment during wet soil conditions will increase evidence of soil compaction, soil puddling and soil disturbance.

<u>GROUND-BASED HARVESTING ON STEEP OR EROSION-PRONE SLOPES</u> OAR 629-630-0150

(5) If skid trails are located on steep or erosion-prone slopes, operators shall locate them at least 100 feet from any stream channels.

<u>APPLICATION</u>:

Section (5) can be used for enforcement.

Sections (5), (6), and (7) of this rule focus on placing skid trails on steep or erosion-prone slopes only in locations where effective drainage is feasible. Use those sections when operators have failed to locate skid trails properly. Use section (8) when skid trails on steep or erosion-prone slopes have been properly located, but operators have not installed water bars as needed to prevent drainage water from carrying sediment into waters of the state.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>. An unsatisfactory condition exists when excavated or compacted skid trails on steep or erosion-prone slopes are located within 100 feet (slope distance) of any stream. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state. OAR 629-670-0115(1)(c).

<u>Damage</u>: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

<u>Written Statement of Unsatisfactory Condition</u>: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator pullback sidecast pullback (if feasible), water barring, mulching, seeding, or other measures to minimize the entry of sediment into streams.

ADMINISTRATION:

Section (5) directs operators to carefully plan skid trail locations on steep or erosion-prone slopes. On steep or erosion-prone slopes, skid trails within 100 feet of streams pose unacceptable risks of erosion into streams. Operators must keep skid trails on steep or erosion-prone slopes at least 100 feet from any stream, regardless of stream type. "Stream" is defined in OAR 629-600-0100. The 100-foot distance is to be measured in slope distance from the high water level.

An approved PFAP that provides "equal or better" resource protection is required to use tethered ground-based equipment for felling or yarding on steep slopes where there is **not** "intermediate" or "substantial" downslope public safety risk:

- Within 100 feet of any wet or dry stream channel, regardless if water is present.

Note: Consult the ODF geotechnical specialist if there are suspected downslope public safety exposure, including "low" downslope public safety risk, even if slopes are less than the HLHL slope thresholds. The PFAP should describe practices that will provide effective drainage to allow drainage water to filter or settle out before the drainage water enters waters of the state.

Note: The PFAP template example can be found on ODF public webpage under publications.

Example: An approved PFAP for tethered cutting or yarding could allow cutting within the 100-foot distance from any stream, but not within 50 feet rather. In some situations, it may be acceptable to allow cutting to edge of the stream channel. Generally, there is a greater risk for soil disturbance on HLHL for cutting and yarding operations, rather than tethered cutting and cable yarding operations. Other practices should include statements such as, machinery passes will be limited, as will directional changes and track spin and track berms will be knocked down to restore the ground surface and slash placed on the disturbed soil.

<u>GROUND-BASED HARVESTING ON STEEP OR EROSION-PRONE SLOPES</u> OAR 629-630-0150

(6) Operators shall locate skid trails where water can drain off the skid trail and onto undisturbed soils.

<u>APPLICATION</u>:

Section (6) can be used for enforcement.

Sections (5), (6), and (7) of this rule focus on placing skid trails on steep or erosion-prone slopes only in locations where effective drainage is feasible. Use those sections when operators have failed to locate skid trails properly. Use section (8) when skid trails on steep or erosion-prone slopes have been properly located, but operators have not installed water bars as needed to prevent drainage water from carrying sediment into waters of the state.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>. An unsatisfactory condition exists when skid trails on steep or erosion-prone slopes are located where water cannot be diverted from the skid trails onto undisturbed soils. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

<u>Damage</u>: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

<u>Written Statement of Unsatisfactory Condition</u>. Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator pullback sidecast pullback (if feasible), water barring, mulching, seeding, or other measures to minimize the entry of sediment into streams.

ADMINISTRATION:

Section (6) is the drainage objective for locating skid trails on steep or erosion-prone slopes. The key in this section is for operators to carefully plan skid trail locations on steep or erosion-prone slopes. Repair or correction once the skid trail is in the wrong location can be costly and may not be feasible. Drainage water must run off of skid trails and away from skid trails, not back onto the trails.

<u>GROUND-BASED HARVESTING ON STEEP OR EROSION-PRONE SLOPES</u> OAR 629-630-0150

(7) Skid trails shall not be located straight up and down steep or erosion prone slopes for a distance exceeding 100 feet unless effective drainage and sediment filtration can be achieved.

APPLICATION:

Section (7) can be used for enforcement.

Sections (5), (6), and (7) of this rule focus on placing skid trails on steep or erosion-prone slopes only in locations where effective drainage is feasible. Use those sections when operators have failed to locate skid trails properly. Use section (8) when skid trails on steep or erosion-prone slopes have been properly located, but operators have not installed water bars as needed to prevent drainage water from carrying sediment into waters of the state.

COMPLIANCE:

Unsatisfactory Condition. An unsatisfactory condition exists when skid trails are located straight up and down steep or erosion-prone slopes for more than 100 feet slope distance in such a fashion that effective drainage and sediment filtration cannot be achieved. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition. Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage

occurring. Direct the operator to pullback sidecast (if feasible), water barring, mulching, seeding, or other measures to minimize the entry of sediment from skid trails into waters of the state.

ADMINISTRATION:

Section (7) address planning by operators to identify skid trail locations before operating on steep or erosion-prone slopes. It is often very difficult, if not impossible, to divert water from skid trails that run straight up and down slopes. Drainage water must run off and away from skid trails, not back onto the trails causing further erosion.

<u>GROUND-BASED HARVESTING ON STEEP OR EROSION-PRONE SLOPES</u> OAR 629-630-0150

(8) Operators shall install effective cross ditches on all skid roads located on steep or erosion-prone slopes.

<u>APPLICATION</u>:

Section (8) can be used for enforcement.

Sections (5), (6), and (7) of this rule focus on placing skid trails on steep or erosion-prone slopes only in locations where effective drainage is feasible. Use those sections when operators have failed to locate skid trails properly. Use section (8) when skid trails on steep or erosion-prone slopes have been properly located, but operators have not installed effective cross ditches (water bars) as needed to prevent drainage water from ponding or carrying sediment into waters of the state.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition when on skid road located on steep or erosion-prone slopes, operators fail to install cross ditches (water bars) as needed to keep runoff water from carrying eroded sediment into streams or other waters of the state. An unsatisfactory condition when on skid trails located on steep or erosion-prone slopes, operators fail to install effective cross ditches (water bars) which results in ponding water on the slope. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

<u>Damage</u>: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

<u>Written Statement of Unsatisfactory Condition</u>: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to pullback any unstable sidecast and place it in a stable location, or to install drainage structures as necessary to prevent surface erosion, or to vacate and stabilize any skid trails or landings located on unstable slopes.

ADMINISTRATION:

Section (8) addresses installation of "cross ditch," which means an excavated water diversion that is deeper than a water bar, with a correspondingly higher mound of soil on the downhill side. Cross ditches will usually be deep and high enough that passenger vehicles (including four-wheel drive pickup) cannot pass. "Effective" means that the cross ditch is located and constructed so that drainage water is directed off of and away from the skid trail and onto soils where sediment can be filtered before entering streams or other waters of the state while not ponding water on the slope. Cross ditches must be located and spaced as needed to avoid erosion into waters of the state; maximum spacing should generally not exceed 200 feet.

Note: Cross ditches should **rarely be used on steep slopes**. Water bars should only be deep enough to move water off the skid trail, to minimize soil deterioration.

<u>GROUND-BASED HARVESTING ON STEEP OR EROSION-PRONE SLOPES</u> OAR 629-630-0150

(9) Operators shall limit the amount of ground with disturbed soils on steep or erosion-prone slopes as described in Sections (2) and (3) of this rule to no more than ten percent of the steep or erosion-prone slopes within the operation area.

<u>APPLICATION</u>:

Section (9) can be used for enforcement.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>. An unsatisfactory condition exists when ground disturbance on steep or erosion-prone slopes is approaching or exceeds ten percent of the area of those slopes within the operation unit.

<u>Damage</u>: Damage occurs when the unsatisfactory condition is not avoided by limiting ground disturbance on steep or erosion-prone slopes to less than ten percent of those slopes within the operation area. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

<u>Written Statement of Unsatisfactory Condition</u>. Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Appropriate corrective actions will vary with the site. Direct the operator pull back sidecast (if feasible), water barring, mulching, or seeding.

<u>ADMINISTRATION</u>:

Section (9) is focused on prevention. Higher levels of disturbance are likely to lead to erosion that enters waters of the state. Effective rehabilitation of skid trails on steep or erosion-prone slopes after the fact is often not feasible.

The ten percent disturbance standard in this section is half the standard used in OAR 629-630-0100(2) and (3) because erosion is much more likely on steep or erosion-prone slopes. Calculate the percent disturbance based on the total ground-based and cable harvested area of the slopes within the operation unit that are considered steep or erosion-prone, including HLHL. See OAR 629-630-0150(2) and (3) and definition of HLHL in OAR 629-600-0100.

LANDINGS

OAR 629-630-0200

(1) Operators shall minimize the size of landings to that necessary for safe operation.

APPLICATION:

Section (1) can be used for enforcement. This section applies when operators construct landings larger than needed for the harvest operation.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when a landing is larger than is reasonably necessary for safe and practical operation. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state, or when damage to soil productivity cannot be corrected. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to pullback and place fill and sidecast onto stable locations, or erosion abatement measures. Restoration methods may include road rock removal, re-grading, and sub-soiling (where appropriate).

ADMINISTRATION:

Generally, landings larger than one-quarter acre (approximately 100 feet by 100 feet) are larger than reasonably necessary. Careful consideration of correction and repair is especially important when impacts to soil productivity are a concern. If correction (or repair) is feasible, the entire landing must be restored to a productive condition. For landings constructed without much excavation, removal of road rock (if there is a significant layer or rock) and the use of sub-soiling equipment may be adequate. Where landings include deep cuts, pullback and re-grading of excavated soil may be necessary.

Oversized landings reduce the productive area of forestlands and increase the risk of sediment entering into waters of the state. The SF should encourage operators to limit landing size to what is reasonably necessary for safe operation. The 100 x 100 foot standard is intended as an upper limit. In many operations, landings of smaller sizes will meet safety and operational needs.

Allowance for safety may occasionally necessitate larger landings. When evaluating landing size and safety, the SF may need to consult with a representative from the Oregon Occupational Safety and Health Division (OR-OSHA). On rare occasions, operators may need landings larger than one-quarter acre to meet special operational needs, or to avoid additional road construction on steep slopes. Air operations usually require larger but fewer landings to allow for landing and servicing the aircraft. Aerial yarding usually proceeds more quickly than log hauling requiring more area to deck yarded logs prior to removal.

Consult the Forest Practices Field Coordinator if there are questions about unsatisfactory conditions, repairs, or corrective actions.

LANDINGS

OAR 629-630-0200

(2) Operators shall locate landings on stable areas so as to minimize the risk of material entering waters of the state.

APPLICATION:

Section (2) can be used for enforcement. This section applies when operators locate landings on unstable areas where there is also a risk of material entering waters of the state.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when landings are located in unstable areas. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state. Unstable areas include:

1. Slopes steeper than 60 percent or erosion-prone slopes steeper than 40 percent;
2. HLHL (as defined in OAR 629-600-0100); or
3. Excavated, filled, or side-casted areas may reactivate an old landslide.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to pullback and place fill and side-cast onto stable locations, and erosion abatement measures.

ADMINISTRATION:

Section (2) prohibits locating landings on unstable sites, including very steep slopes, HLHL, and existing slumps or slides. Operators must plan and operate carefully as needed to meet the objective to protect soil productivity. For example, an operation map shows exclusion areas that are problematic because of unstable very steep slopes, slumps or slides. The SF should consult ODF's Geotechnical Specialist if there are questions about landing stability and the risk of materials entering waters of the state. Prevention of damage may require complete landing reconstruction or removal.

LANDINGS

OAR 629-630-0200

(3) Operators shall avoid locating landings in riparian management areas. When no feasible alternative landing locations exist, operators shall submit a written plan to the State Forester before locating landings in riparian management areas.

APPLICATION:

Section (3) can be used for enforcement. This section applies when operators locate landings in an RMA without submitting a written plan.

The requirement for a **non-statutory** written plan under this rule may be waived if the SF determines that the formal plan process is not needed to ensure resource protection. Consideration of the waiver begins when the operator requests the waiver. Unless the department grants the waiver, a **non-statutory** written plan is required and must be submitted before the practice or operation begins.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when operators locate landings or any portions of landings in RMAs without submitting the required written plan. An unsatisfactory condition exists when a landing is located in an RMA when feasible alternative locations exist, despite the stated intentions in the written plan.

Damage: Resource damage is not a prerequisite for taking enforcement action on a procedural violation. The operator, by not submitting a written plan, denies the SF the opportunity to review and comment on the operation.

It is also resource damage when a landing is located in an RMA when feasible alternative locations exist, despite the stated intentions in the written plan. Landings located in RMAs should be evaluated for resource damage specified in the other sections of this rule.

Written Statement of Unsatisfactory Condition: Under specific conditions listed in OAR 629-670-0125 a written statement of unsatisfactory condition may be issued instead of a citation. A written statement of unsatisfactory condition should be issued when corrective action or complete repair is feasible and practical prior to damage occurring.

ADMINISTRATION:

Section (3) prohibits the location of landings or log decks within the RMA. All areas used for decking logs are considered landings. See also Forest Practices Technical Note 7, Avoiding Roads in Critical Locations.

Written Plans: Statutory written plans are required for activity within 100 feet of Type F, Type SSBT and D and significant wetlands. A non-statutory written plan may be required for activity within the RMAs of large and medium Type N streams and large lakes, as well as for activity that may impact small Type N streams described in OAR 629-605-0170(10). See OAR 629-605-0170, 629-645-0000, and 629-650-0005.

If there are no reasonable alternative locations, this section allows operators to locate landings within RMA areas after submitting a required written plan. The SF must determine that the operator has considered all reasonable alternative locations and methods and that no feasible alternatives are available. Landings in the RMA should be temporary if possible, and the disturbance should always be the minimum necessary for safe operation. The SF may recommend protection and restoration measures that exceed standard FPA requirements, as needed and appropriate for the specific situation. Landings should **not** be acceptable in the aquatic area or within 20-feet of the high water level. Consultation with Oregon Department of Fish & Wildlife (ODFW) may be appropriate during review of the written plan.

When a written plan for operations near waters is required, the operator should include in the written plan the proposed resource protection measures, including restoration.

Note: A PFAP is not required because the rule provides for the use of a written plan when there are no feasible alternatives.

LANDINGS

OAR 629-630-0200

(4) Operators shall not incorporate slash, logs, or other large quantities of organic material into landing fills.

APPLICATION:

Section (4) can be used for enforcement. This section applies when destabilizing quantities of organic material are buried in landing fills.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when slash, logs, or other large accumulations of organic debris are incorporated into landing fills. An unsatisfactory condition exists when tension cracks or other indicators of soil instability or movement are evident. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering waters of the state through landing slope failure or overland flow. Damage also occurs when the unsatisfactory condition results in adverse impacts to soil productivity over a significant area down-slope due to its causing slope failure. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to pullback and place fill and organic debris onto stable locations.

ADMINISTRATION:

Section (4) is intended to prevent a landing fill failure by keeping organic debris out of landing fills. Organic debris in fills decays over time. Where logs or other large accumulations of organic debris are in fills, the loss of strength that occurs as decay advances can allow the fills to fail under wet soil conditions. This section is generally applicable when slopes are over 50 percent, or when the landing is within 100 feet of waters of the state. Determinations of the causes or likelihood of landslides can be difficult; consult ODF's Geotechnical Specialist if there are questions relating to landslides and organic material in landing fills. See also guidance for OAR 629-625-0440(3).

LANDINGS

OAR 629-630-0200

(5) Operators shall deposit excess material from landing construction in stable locations well above the high water level.

APPLICATION:

Section (5) can be used for enforcement. This section applies to the disposal of overburden not directly utilized in landing construction.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state. An unsatisfactory condition exists when operators place material from landing construction in any of the following locations:

1. Any location below the 100-year flood level of any water of the state;
2. Any slide, slump, or unstable slope above any water of the state;
3. Any high landslide hazard location.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to move excess material to a stable location above the 100 year flood level. Previous landing construction on hazardous slopes should be relocated.

ADMINISTRATION:

Section (5) is intended to prevent damage to water quality or aquatic habitat from excess material generated by landing construction. Excess landing material such as soil, rock, or clearing debris must be placed in stable locations well above the high water level. "Well above the high water level" means above the 100-year flood level. End hauling excess material to a stable disposal site may be required. See also guidance for division 623, Shallow, Rapidly Moving Landslides and Public Safety.

DRAINAGE SYSTEMS
OAR 629-630-0300

(1) The purpose of this rule is to provide and maintain a drainage system for each landing, skid trail, and fire trail that will control and disperse surface runoff to minimize sediment entering waters of the state.

APPLICATION:

Section (1) is not used for enforcement; it is the rule purpose statement. Take enforcement action as appropriate under OAR 629-630-0300 (2) through (4).

ADMINISTRATION:

Section (1) is intended to minimize the entry of sediment into waters of the state by providing drainage systems on all landings, skid trails, and fire trails.

DRAINAGE SYSTEMS
OAR 629-630-0300

(2) Operators shall construct dips, grade reversals or other effective water diversions in skid trails and fire trails as necessary to minimize soil displacement and to ensure runoff water is filtered before entering waters of the state.

APPLICATION:

Section (2) can be used for enforcement. This section applies to the design, layout, initial construction, and consequent performance of skid trails and fire trail drainage systems.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when an operator fails to construct dips, grade reversals, or other diversions on skid trails or fire trails. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state during or after the operation.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly sub-soiled (where appropriate), stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action is feasible and practical prior to damage occurring. Direct the operator to construct and maintain drainage structures as needed to prevent sediment from entering waters of the state.

ADMINISTRATION:

Section (2) addresses both skid trails and fire trails, and focuses on integrated design and construction features such as dips and grade reversals, in the initial layout and construction. With planning and care, operators can avoid creating trails that are difficult or impossible to drain. Dips and grade reversals can be used to create self-draining sections of skid trails or fire trails.

Drainage should be designed to divert runoff onto locations that will allow filtering of sediment before the runoff enters waters of the state. Water should not be directed onto locations that will be eroded or destabilized. Water bars or other diversions may be needed as well on some sections of trails.

The SF should educate operators on the importance of planning skid trail location and design. Tethered ground-based equipment generally causes less soil disturbance than untethered ground-based equipment that uses skid trails up and down steep slopes rather than closer to the contour. Skid trails that go up and down slopes are very difficult to drain and should be strongly discouraged. See also guidance for OAR 629-630-0100(1).

DRAINAGE SYSTEMS
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(3) Operators shall drain skid trails by water barring or other effective means immediately following completion of the operation and at all times during the operation when runoff is likely.

APPLICATION:

Section (3) can be used for enforcement. This section applies to the maintenance of skid trails during use, and treatment of skid trails at the completion of use. Since fire trails are not specifically mentioned in this section, Use section (2) for maintenance needs on fire trails.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when operators fail to construct and maintain water bars, or other drainage structures on skid trails. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state during or after the operation.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly sub-soiled (where appropriate), stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action is feasible and practical prior to damage occurring. Direct the operator to construct water bars or use other effective means to facilitate drainage of skid trails.

ADMINISTRATION:

Section (3) focuses on adding water bars or other water diversions after skid trails have been constructed. Drainage structures must be in place and functional immediately after completion of the operation and at all times during the operation when runoff is likely. Drainage structures must be sufficient to remain operative under all uses, including recreational uses, and runoff events until they are rendered unnecessary by re-vegetation or other processes. Maintenance may be necessary.

Water bars and cross ditches should be constructed at an angle and "ditched out" to prevent water retention and only be deep enough to move water off the skid trail. Water bars and cross ditches must be cut into compacted material rather than being constructed by piling loose material on the surface of the skid trail. When feasible, construction equipment should back away from rather than progressing over constructed water bars and drainage ditches. Skid trail fills that block minor swales (depressions with no eroded channel) may pond water during runoff generating events. To avoid fill erosion or washout, fill material in swales should be removed and stabilized prior to wet periods.

Operators should follow Table 1. Guidelines for water bar spacing on skid trails:

Table 1. Maximum Water Bar Spacing for Skid Trails by Soil Type

	Soil Description	
Slope of Skid Trail	**Erodible** (silt, sands, granitics)	**Less Erodible** (loam, gravel, cobble)
5 to 15%	150 feet	300 feet
15 to 35%	100 feet	200 feet
35 to 50%	50 feet	100 feet
Over 50%	25 feet	50 feet

DRAINAGE SYSTEMS
OAR 629-630-0300

(4) Operators shall establish effective drainage on landings during and after use.

APPLICATION:

Section (4) can be used for enforcement. This section applies to landing drainage during and after use.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when operators fail to provide effective landing drainage during and after use. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state during or after the operation.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to outslope the landing, ditch water onto stable slopes, or pullback of fill material placing it in a stable location.

ADMINISTRATION:

Operators should be encouraged to plan, during layout and construction, for landing drainage and roads and trails that will drain towards landings. Ongoing maintenance of drainage during use is also essential. Debris should be removed from drainage structures during landing use to ensure effective drainage any time it is needed.

Operators must slope or ditch landings so that water running across cut slopes, working surfaces, or fills does not carry sediment into waters of the state. Drainage from landings must not be directed onto HLHL. See the guidance under OAR 629-630-0500 for more information.

<u>TREATMENT OF WASTE MATERIALS</u> OAR 629-630-0400

(1) Operators shall leave or place all debris, slash, sidecast and other waste material associated with harvesting in such a manner to prevent their entry into waters of the state.

<u>APPLICATION</u>:

Section (1) can be used for enforcement. This section applies to soil and organic waste material, and specifically addresses possible entry into waters of the state.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition exists when waste material generated from harvesting activities is left or placed in waters of the state, or where it is likely to enter waters of the state.

<u>Damage</u>: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Remove material as soon as practicable, unless removal is likely to create more damage.

<u>Written Statement of Unsatisfactory Condition</u>: Issue a written statement of unsatisfactory condition when written statement of unsatisfactory condition should be issued when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to remove or pullback of debris and other material and place in a stable location. Other erosion control measures such as grass seeding and mulching may be necessary.

<u>ADMINISTRATION</u>:

Section (1) applies to slash, other woody debris, and soil or rock debris generated by harvesting activities. Operators must place these materials so that they do not enter waters of the state. Burying of organic debris is acceptable, provided that the debris is not placed in a fill or other location where decay of the debris is likely to cause a mass failure. Operators must follow fire prevention and smoke management rules if they choose to burn slash accumulations.

***TREATMENT OF WASTE MATERIALS* OAR 629-630-0400**

(2) Where sidecast material or exposed soils are potentially unstable or erodible, the operator shall stabilize it by pullback, spreading out, seeding or other effective means.

APPLICATION:

Section (2) can be used for enforcement. This section applies to areas of potential mass failure or surface erosion.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when operators fail to stabilize sidecast material or exposed soils as prescribed, and that failure creates potential for surface erosion or tension cracks and other evidence of instability. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

Damage also occurs when the unsatisfactory condition results in soil disturbance over a significant portion of the operation unit. Disturbance of more than 20 percent of the ground in the harvest unit is considered damage. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to take the appropriate corrective action (or repair): pullback, spreading out, seeding, or other effective means.

ADMINISTRATION:

Section (2) is intended to prevent sediment from entering waters of the state through erosion of exposed soils or from landslides caused by sidecast soil. Exposed soils often do not re-vegetate rapidly enough to prevent erosion, especially if lower soil horizons have been exposed. Stabilization measures may be needed to prevent slope failure or sediment entering waters of the state. Sidecast material is less stable than in-place soil. Stabilization through pullback, spreading

out of material so that the depth is reduced, mulching, or other means, may be necessary to avoid causing landslides.

Operators must remove sidecast materials and debris accumulations from HLHL. Use the guidance under OAR 629-630-0500.

<u>TREATMENT OF WASTE MATERIALS</u> OAR 629-630-0400

(3) Operators shall remove from the forest all petroleum product related waste material associated with the operation including, but not limited to, crankcase oil, filters, grease and oil containers.

<u>APPLICATION</u>:

Section (3) can be used for enforcement. This section applies to the removal of all petroleum products and prohibits draining oil onto the ground when servicing equipment.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition exists when an operator leaves any of the following items associated with the operation on forestland: crankcase oil, filters, grease or oil containers, or any other petroleum product items. An unsatisfactory condition exists when waste materials have entered or are likely to enter a wet or dry stream channel or waters of the state.

<u>Damage</u>: Damage occurs when the unsatisfactory condition results in preventable deposits of petroleum products being left on forestland or entering waters of the state. Also evaluate taking enforcement action under OAR 629-620-0100.

<u>Written Statement of Unsatisfactory Condition</u>: Issue a written statement of unsatisfactory condition when corrective action can be taken prior to damage occurring. Direct the operator to remove the petroleum product (including contaminated soil) from forestlands to a licensed disposal site.

<u>ADMINISTRATION</u>:

Section (3) is intended to prevent damage to water quality, aquatic habitat, and wildlife habitat by requiring the removal of petroleum products and associated filters and containers from the forest. Filters and containers must be removed, not buried on site. Section (3) requires only removal, but the material should be properly disposed of at a landfill or licensed disposal service. Federal and state laws prohibit the application of used oil on road surfaces for dust abatement or other purposes.

If petroleum products enter or are likely to enter waters, take action as described in Directive 6-3-0-002 *"Hazardous Materials Incident Reporting and Control."*

<u>TREATMENT OF WASTE MATERIALS</u> OAR 629-630-0400

(4) Operators shall dispose of all other debris such as machine parts, old wire rope, and used tractor tracks so that such materials do not enter waters of the state.

<u>APPLICATION</u>:

Section (4) can be used for enforcement. This section applies to the disposal of all machinery waste resulting from the operation and is linked to entry into waters of the state.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition exists when machinery waste such as machine parts, old wire rope, used tractor tracks, or similar materials are left in locations where they are likely to enter waters of the state.

<u>Damage</u>: Damage exists when other debris such as machine parts, old wire rope, and used tractor tracks have entered waters of the state.

<u>Written Statement of Unsatisfactory Condition</u>: Issue a written statement of unsatisfactory condition when the operator can take corrective action to remove and properly dispose of waste material that is feasible and practical prior to damage occurring. Direct the operator to remove machinery and logging equipment waste from forestlands to a licensed disposal site.

<u>ADMINISTRATION</u>:

Section (4) is intended to prevent damage to water quality and aquatic habitat by requiring that machinery wastes be kept out of waters of the state.

***HARVESTING ON HIGH LANDSLIDE HAZARD LOCATIONS* 629-630-0500**

(1) The purpose of this rule is to prevent timber harvesting-related serious ground disturbance and drainage alterations on all high landslide hazard locations, and to reference additional requirements when there is public safety exposure below the high landslide hazard location.

APPLICATION:

Section (1) is not subject to enforcement. It is the purpose statement for OAR 629-630-0500 Sections (2) through (6).

ADMINISTRATION:

The intent of this rule is to prevent harvest operations that cause adverse ground disturbance, gouging, and side casting on HLHL. These rules apply when operating on **any** HLHL regardless of public safety exposure. If there is public safety exposure, such as homes or roads below the operation, then the practices described in division 623 may apply.

HLHL may be viewed on ODF's Vantage and FERNS platforms. Lidar imagery is available on Vantage.

HLHL are determined based on field measurements of the steepest slopes on-the-ground. These field measurements may find slope conditions different from the initial map screen, and take precedence over the screen. **Note:** Short pitches of steep slopes that are less than 30 feet slope length in otherwise relatively gentle terrain are not considered HLHL. Constructed cutslopes are not considered HLHL, but sidecast and other fillslopes are.

See additional guidance in Forest Practices Technical Note 2, High Landslide Hazard Locations and Forest Practices Technical Note 6, Determination of Rapidly Moving Landslide Impacting Rating.

<u>HARVESTING ON HIGH LANDSLIDE HAZARD LOCATIONS</u> 629-630-0500

(2) Operators and the State Forester shall share responsibility to identify high landslide hazard locations and to determine if there is public safety exposure from shallow, rapidly moving landslides using methods described in OAR 629-623-0100 through 0300. If there is public safety exposure, then the practices described in OAR 629-623-0400 through 0800 shall also apply.

<u>APPLICATION</u>:

Section (2) is not used for enforcement. The intent of section (2) is to identify the shared responsibility of the operator and State Forester to identify HLHL and to determine if there is public safety exposure to shallow, rapidly moving landslides.

<u>ADMINISTRATION</u>:

The operator should conduct pre-harvest screening of proposed harvest operations to determine the presence of HLHL using the procedures described in Forest Practices Technical Note 2, High Landslide Hazard Locations. It is the operator's responsibility to determine the specific locations of HLHL on the proposed operation. If HLHL are present on or near the proposed harvest unit, an assessment of downslope public safety exposure should be made. If there is downslope public safety exposure, apply the practices described in division 623. Regardless of downslope public safety exposure, sections (3) through (5) of this rule apply to any HLHL.

A HLHL is a specific site that is subject to initiation of a shallow, rapidly moving landslide, see the complete definition in OAR 629-600-0100. HLHL slopes are map reviewed and/or field confirmed:

- Slopes in western Oregon over 80% (or 75% in Tyee core area).
- Headwalls or draws in western Oregon over 70% (or 65% in Tyee core area).
- Atypical conditions anywhere in Oregon where the landslide hazard is equivalent to that on the HLHL slope thresholds identified in 2(d)(i) and (ii), as determined by a geotechnical specialist. The final determination of equivalent hazard is made by the State Forester.

***HARVESTING ON HIGH LANDSLIDE HAZARD LOCATIONS* 629-630-0500**

(3) Operators shall not construct skid roads on high landslide hazard locations.

APPLICATION:

Section (3) can be used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when skid roads are located on HLHL.

Damage: Damage occurs when the unsatisfactory condition results in adverse ground disturbance or drainage alterations on HLHL. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to pullback any unstable sidecast and place it in a stable location, or to install drainage structures as necessary to prevent surface erosion, or to vacate and stabilize any skid trails or landings located on unstable slopes.

If the operator was informed of the presence of a high landslide hazard location and constructed a skid road on that location, a citation should be issued.

ADMINISTRATION:

Pre-operation planning should precede any proposed harvest on HLHL. Operators should be aware of the location of any HLHL and clearly identify them to any sub-contractors. The SF should evaluate any harvest plan presented to them for operations on HLHL.

***HARVESTING ON HIGH LANDSLIDE HAZARD LOCATIONS* 629-630-0500**

(4) Operators shall not operate ground-based equipment on high landslide hazard locations.

APPLICATION:

Section (4) can be used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when ground-based equipment is used on HLHL.

Damage: Damage occurs when the unsatisfactory condition results in adverse ground disturbance or drainage alterations on HLHL. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to pullback any unstable sidecast and place it in a stable location, or to install drainage structures as necessary to prevent surface erosion, or to vacate and stabilize any skid trails or landings located on unstable slopes.

ADMINISTRATION:

Pre-operation planning should precede any proposed harvest on HLHL. Operators should be aware of the location of any HLHL and clearly identify them to any sub-contractors. The SF should evaluate any harvest plan presented to them for operations on HLHL.

If the operator was informed of the presence of a high landslide hazard location and ground-based equipment was used on that location, issue a citation.

An approved PFAP that provides "equal or better" resource protection is required to use tethered ground-based equipment for felling or yarding on steep slopes where there is not "intermediate" or "substantial" downslope public safety risk:

- On all high landslide hazard locations, OAR 620-630-0500(1).

Note: Consult the ODF geotechnical specialist if there are suspected downslope public safety exposure, including "low" downslope public safety risk, even if slopes are less than the HLHL slope thresholds. The PFAP should describe practices that will provide effective drainage to allow drainage water to filter or settle out before the drainage water enters waters of the state.

Note: The PFAP template example can be found on ODF public webpage under publications.

Example: An approved PFAP may allow tethered cutting on all steep slopes, but restrict tethered yarding to slopes less than 100%. Generally, there is a greater risk for soil disturbance on HLHL for tethered cutting and yarding operations, rather than tethered cutting and cable yarding operations. Other practices should include statements such as, machinery passes will be limited, as will directional changes and track spin and track berms will be knocked down to restore the ground surface and slash placed on the disturbed soil.

HARVESTING ON HIGH LANDSLIDE HAZARD LOCATIONS 629-630-0500

(5) Operators shall prevent deep or extensive ground disturbance on high landslide hazard locations during log felling and yarding operations.

APPLICATION:

Section (5) can be used for enforcement action.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when felling and yarding operations result in preventable ground disturbance on HLHL.

Damage: Damage occurs when the unsatisfactory condition results in deep or extensive ground disturbance, which concentrates water, preventing sediment filtering before entering waters of the state. Damage occurs when the extent of disturbance buries surface layers and exposes less productive subsoil (mineral soils).. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to pullback any unstable sidecast and place it in a stable location, or to install drainage structures as necessary to prevent surface erosion, or to vacate and stabilize any skid trails or landings located on unstable slopes.

ADMINISTRATION:

Pre-operation planning should precede any proposed harvest on HLHL. Operators should be aware of the location of any HLHL and clearly identify them to any sub-contractors. The SF should evaluate any harvest plan presented to them for operations on HLHL.

***HARVESTING ON HIGH LANDSLIDE HAZARD LOCATIONS* 629-630-0500**

(6) Operators concerned about the application of these standards to a specific operation may consult with the State Forester to obtain an evaluation of their harvesting plan and its likelihood of compliance with these standards.

APPLICATION:

Section (6) is not used for enforcement.

ADMINISTRATION:

Pre-operation planning should precede any proposed harvest on HLHL. Operators should be aware of the location of any HLHL and clearly identify them to any sub-contractors. The SF should evaluate any harvest plan presented to them for operations on HLHL.

FELLING; REMOVAL OF SLASH OAR 629-630-0600

(1) Operators shall fell, buck, and limb trees in ways that minimize disturbance to channels, soils and retained vegetation in riparian management areas, streams, lakes and all wetlands greater than one-quarter acre, and that minimize slash accumulations in channels, significant wetlands and lakes.

APPLICATION:

This section can be used for enforcement. However, sections (2) and (3) describe more specific protection standards more appropriate for enforcement.

COMPLIANCE:

Unsatisfactory Condition: There is an unsatisfactory condition when the operator fails to apply appropriate and feasible practices to prevent the potential for damage to the protected resource's functions and values. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: There is damage when adverse and unnecessary disturbance occurs to the *general integrity* of stream beds and banks, soils, retained RMA vegetation, lakes and wetlands. This includes soil disturbance and erosion into wet or dry stream channels, waters of the state; water quality degradation such as turbidity, siltation, excessive nutrient levels, or reduced dissolved oxygen levels; bank disturbance; reduction of the functions and values of retained vegetation; or excessive slash accumulations that may contribute to these effects. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

Yarding Damage. If damage is caused by yarding trees that were not felled into the channel or RMA, refer to in OAR 629-630-0700 Yarding; Cable Equipment Near Waters of the State, or OAR 629-630-0800 Yarding; Ground-based Equipment Near Waters of the State.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to apply specific felling, bucking, limbing or yarding practices to avoid damage. Even if felling has not caused a significant adverse disturbance, the SF should consider the potential disturbance that may occur during yarding. A written statement recommending specific yarding practices is also appropriate under OAR 629-630-0600(2)(c) and (3), though not commonly used on a written statement of unsatisfactory condition.

ADMINISTRATION:

The purpose statement for the harvesting rules is in OAR 629-630-0000. It establishes forest practices standards that maintain the *general integrity* of specific resources, while recognizing that felling and associated harvest practices cause temporary disturbances. Felling applies to both hand and machine felling practices.

“Away" means perpendicular, at any angle away, or parallel to the channel, as long as the tree does not fall directly onto and/or slide into the bed, banks, or required leave vegetation.

Note: A stream means a channel, such as a river or creek that carries flowing surface water during some portion of the year, OAR 629-600-0100. Headwalls, swales, gullies, or draws without a defined channel are not considered streams for the purposes of slash removal, but operator activity in these areas must not cause mud or dirty water to drain downslope into streams. Operators must consider the effects of slash in streams whether there is water in the channel at the time of the operation or not.

General integrity, as it is used in this guidance, means the intact purposes, functions and values of the aquatic area, beds, banks, soils, RMA, and RMA vegetation. Except for yarding corridors through RMA vegetation, trees must be left with adequate crowns to provide original canopy cover. Understory vegetation required to be retained in RMAs must remain relatively undisturbed. Aquatic areas and banks must be stable and functional over the entire length within the unit. Slash accumulations are to be limited in the areas below the high water level of streams, significant wetlands, and lakes in order to protect water quality, primarily from dissolved oxygen deprivation.

OAR 629-630-0600(1) requires operators to “minimize disturbances” to the RMA and waters of the state when conducting felling and bucking operations. The section also requires the operator to “minimize slash accumulations” in channels, significant wetlands and lakes. Specific practices for achieving these results are described in OAR 629-630-0600(2) and (3).

Note: Retain naturally-occurring wood, in the channel prior to the operation, should be retained.

Minimize Disturbance: Disturbance to the *general integrity* of channels, soils and retained vegetation in RMAs is expected to be minimized during felling, bucking, limbing, and yarding. Type N streams and wetlands must be protected from unnecessary disturbance during felling, bucking, limbing, and yarding.

Minimize Slash Accumulations: Slash must be removed from Type F, Type SSBT and Type D streams, lakes and significant wetlands as required under OAR 629-630-0600(3)(a). The requirements for minimizing slash accumulations in all Type N streams, lakes without fish use or less than one-half acre, or other wetlands greater than one-quarter acre, are addressed under OAR 629-630-0600(3)(b).

High Landslide Hazard Locations; Public Safety: If HLHL are present and there is a risk to public safety from shallow, rapidly moving landslides, apply division OAR 629-623 rules. OAR 629-623-0600 contains standards for felling and slash removal where public safety is at risk. If HLHL are present, but risks to public safety are not involved, apply OAR 629-630-0500 rules.

Debris Torrent-Prone Streams are designated by the State Forester to include channels and confining slopes that drain watersheds containing high landslide hazard locations that are of sufficient confinement and channel gradient to allow shallow, rapid landslide movement. Minimize slash accumulations in debris torrent-prone stream channels where there is a substantial or intermediate downslope public safety risk, as determined by the State Forester. See guidance for OAR 629-623-0600.

Green Trees to be left Near Type F and D Streams: If felling conifers or hardwoods in or along a Type F, Type SSBT or Type D stream RMA is likely to cause adverse disturbance to the *general integrity* of the stream or RMA soils and vegetation, the SF should direct the operator to make a reasonable effort to prevent adverse disturbance by retaining up to 25 percent of the green wildlife leave trees in the RMA. This opportunity is available only in harvest type 2 or harvest type 3 units as specified in ORS 527.676(3)(c).

Note: These extra green wildlife leave trees in the RMA are in addition to trees that are required to be left in the RMA. The operator chooses these wildlife leave trees, provided they are in or adjacent to the RMA (see guidance under ORS 527.676(3)(c).

FELLING; REMOVAL OF SLASH OAR 629-630-0600

(2) During felling operations operators shall:

(a) Whenever possible, fell all conifer trees away from riparian management areas, streams, lakes and significant wetlands, except for trees felled for stream improvement projects.

APPLICATION:

Subsection (2)(a) can be used for enforcement and is applied when conifers are felled near all lakes, significant wetlands all stream types, and their RMAs. Apply subsections (2)(a) to all slopes and subsection (2)(b) to steep slopes.

COMPLIANCE:

Unsatisfactory Condition: There is an unsatisfactory condition when an operator purposely or carelessly fells conifer trees across or into RMAs, streams, lakes and significant wetlands when it was safe and feasible to fell them "away" from the protected RMAs and waters. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Exceptions are allowed and not considered an unsatisfactory condition when:

1. Conifer trees are felled across or into RMAs or waters of the state in stream improvement projects; or
2. The operator determines that a conifer tree or snag is an operational safety hazard that cannot be safely felled away from the protected area; or
3. The protected vegetation or waters are as well or better protected by felling across or into the RMA, stream, wetland, or lake; or
4. The operator makes a good faith effort to fell "away", as directed by rule, but an occasional tree "gets away" because of wind, undetected rot, or other factors beyond the operator's control; or
5. The topography is so steep or bisected along small Type N streams that it is just not possible to fell away, or otherwise keep slash out of the channel.

The department recognizes that operators need some discretion in exceptions 3 and 5 above and in determining if it is safe and feasible to fell conifers away from the protected resource. Where written plans are required because operations will be near waters (Type F streams, for example), the operator must describe in the plan any known proposals to fall conifer trees across or into the waters or associated RMAs.

Note: Changes can be made by the operator under the exceptions listed above. Only in this very narrow set of circumstances are operators allowed to deviate from the rule practices without creating an unsatisfactory condition. Where written plans are not required (for harvesting operations near most small Type N streams, for example), the operator makes the determination.

However, in this latter situation, the operator should be aware of the desired result and of the fact that the results will be subject to SF review.

Damage: There is damage when conifers are deliberately or carelessly felled into an RMA, wet or dry stream channel, lake or significant wetland, adversely disturbing the *general integrity* of soils, beds, banks or vegetation. Damage effects may include: sediment gouged or dragged into waters of the state; exposed soil near the water eroding into the stream; accumulation of slash in waters of the state that changes the hydrologic function; slash accumulations that affect water quality; or impairment of the functions of retained vegetation. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

If enforcement action is under consideration and the operator alleges that it was unsafe or infeasible to fell the conifers away from the protected resource, the SF will need to investigate and judge whether there is evidence to support or refute the operator's contention.

Resource damage is not a prerequisite for taking enforcement action on a procedural violation. The operator, by not submitting a written plan, denies the SF the opportunity to review and comment on the operation.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to apply specific felling, bucking, limbing, or yarding practices when there is an opportunity to avoid damage during or after felling. If felling has not caused a significant impact, the SF should consider the potential damage that may occur during yarding.

ADMINISTRATION:

Written Plans: Statutory written plans are required for activity within 100 feet of Type F, Type SSBT and Type D streams and significant wetlands. A non-statutory written plan may be required for activity that may impact Type N streams or within 100 feet of large lakes. See OAR 629-605-0170, 629-645-0000, and 629-650-0005. The written plans should address felling practices to protect the resources listed in subsection (2)(a).
The SF should take available opportunities to educate operators that felling conifers away from RMAs, streams, lakes, and significant wetlands is expected to protect the functions and values of those resources.

Felling Standards: Subsection (2)(a) sets a "whenever possible" standard of felling conifer trees away from RMAs and certain waters. This means that, with limited exceptions, operators are expected to fell conifer trees in any harvest unit away from RMAs, streams, lakes and significant wetlands by using proper planning and felling techniques. This wording also concedes that there are conditions under which it is safest or most feasible to fell confer trees across RMAs, streams, lakes, and significant wetlands.

"Away" means perpendicular, at any angle away, or parallel to the channel, as long as the tree does not fall directly onto and/or slide into the bed, banks, or required leave vegetation.
The intent is to avoid excessive direct disturbance to the channel and to minimize slash accumulations due to falling.

The rule wording is not prohibitive; therefore, a guidance change was made in a March 17, 2003 memorandum, no longer treating felling across or into RMAs and waters as an Alternate Practice. The requirement to fall conifers away applies to all the listed waters, including all small Type N streams. However, what must be protected varies with the classification of each of the following types of water:

1. For waters with RMAs, including Type F, Type SSBT and D streams, large and medium type N streams, large lakes (greater than 8 acres), other lakes any size with fish, other lakes greater than ½ acre with no fish and significant wetlands, operators must fell conifers away whenever possible to maintain the *general integrity* of the RMA components.
2. For certain small Type N streams, operators must fell conifers away whenever possible to maintain the non-merchantable vegetation within 10 feet of the high water level. See OAR 629-642-0400(6) Table 7, Vegetation Retention for Specified Small Type N Streams and Figure 1
3. For all waters listed in subsection (2)(a), including all small Type N streams, operators must fell conifers away whenever possible to protect the beds and banks and water quality, and to limit slash accumulations.

The department recognizes that operators need some discretion in exceptions 3 and 5 above and in determining if it is safe and feasible to fell conifers away from the protected resource. Where written plans are required because operations will be near waters (Type F streams, for example), the operator must describe in the plan any known proposals to fall conifer trees across or into the waters or associated RMAs. (Changes can be made by the operator under the exceptions listed above.) Where such plans are not required (for harvesting operations near most small Type N streams, for example), the operator may make the determination. However, in this latter situation, the operator should be aware of the desired result and of the fact that the results will be subject to review by the Stewardship Forester.

Operators should not be allowed to use safety, feasibility, or "good faith effort" to justify routine falling of conifer trees across or into RMAs, streams, lakes or significant wetlands.

Felling conifer trees away from RMAs and waters is an important means of preventing slash accumulations within high water levels. This felling practice is also essential to protect the vegetation retained in required RMAs. Certain small Type N streams are the only waters listed in this rule which are provided no RMA and little or no protected vegetative buffer. See OAR 629-642-0400(6) Table 7. The standards in the guidance for OAR 629-630-0600 (3)(b) describe the slash accumulation limits expected for these small streams while recognizing that felling conifers away from such streams is sometimes difficult.

In judging compliance with OAR 629-630-0600 as a whole, emphasis is on satisfactory post-harvest condition of the beds and banks of waters and retained vegetation within RMAs and retention strips. Compliance requires safe and feasible application of effective felling, bucking, limbing, and yarding practices to protect all functions and values associated with these waters. Any methods used, whether listed in the rule or developed by the operator, must achieve protection of water quality, protect retained vegetation, limit slash accumulations, and limit the effects of potential debris flows. When post-harvest conditions do not achieve the purposes of the rule or the standards in guidance, investigation should be conducted to determine the

applicable practice that should have been applied. Enforcement will then be based on the applicable rule subsection.

High Landslide Hazard Locations; Public Safety: If HLHL are present and there is a risk to public safety from shallow, rapidly moving landslides, apply division 623 rules. OAR 629-623-0600 contains standards for felling and slash removal where public safety is at risk. If HLHL are present, but risks to public safety are not involved, apply OAR 629-630-0500 rules..

Debris Torrent-Prone Streams are designated by the State Forester to include channels and confining slopes that drain watersheds containing high landslide hazard locations that are of sufficient confinement and channel gradient to allow shallow, rapid landslide movement. Minimize slash accumulations in debris torrent-prone stream channels where there is a substantial or intermediate downslope public safety risk, as determined by the State Forester. See guidance for OAR 629-623-0600.

Recovery of trees that enter an RMA, stream, lake or wetland - whether intentionally (leaning hardwoods) or inadvertently ("It got away") must maintain the general integrity of the required vegetation in the RMA while minimizing disturbance to the beds and banks of streams, lakes and wetlands greater than ¼ acres. See also guidance discussion in OAR 629-630-0700 and -0800.

<u>FELLING; REMOVAL OF SLASH</u> OAR 629-630-0600

(2) During felling operations operators shall:

(b) On steep slopes, use felling practices such as jacking, line pulling, high stumps, whole tree yarding, or stage-cutting as necessary and feasible to prevent damage to vegetation retained in riparian management areas, soils, streams, lakes and significant wetlands.

<u>APPLICATION</u>:

Subsection (2)(b) can be used for enforcement. In addition to subsection (2)(a), this subsection applies when felling conifers on steep streamside slopes that are generally over 60percent. The practice is to be applied wherever necessary to minimize trees or logs rolling or sliding downhill and adversely disturbing soils, RMA soils and vegetation, or waters of the state.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition exists when the operator fails to use safe and feasible felling practices on steep slopes that prevent adverse disturbance to vegetation, soils, or waters. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Exceptions are allowed and not considered an unsatisfactory condition when:

1. The operator determines that a conifer tree is an operational safety hazard that cannot be safely felled away from the protected area;
2. The protected vegetation or waters would be as well or better protected by felling across or into the RMA, stream, wetland, or lake;
3. The operator makes a good faith effort to fell "away", as directed by rule, but an occasional tree "gets away" because of wind, undetected rot or other factors beyond the operator's control; or
4. The topography is so steep or bisected along small Type N streams that it is just not practical or feasible to fell away.

<u>Damage</u>: There is damage when:

1. The *general integrity* of the required leave vegetation, stream banks, stream beds, lakes or significant wetlands is not protected; or
2. Soil is exposed to erosion within the high water level of any waters of the state; or
3. Significant slope disturbance results in soil erosion into waters of the state.

If damage has been caused by improper felling practices, enforcement action under this subsection is more appropriate than under the rules for vegetation retention. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

Resource damage is not a prerequisite for taking enforcement action on a procedural violation. The operator, by not submitting a written plan, denies the SF the opportunity to review and comment on the operation.

Written Statement of Unsatisfactory Condition: Issue a written statement or unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to apply specific bucking, limbing or yarding practices when there is an opportunity to avoid damage during or after felling.

If felling has not caused a significant impact, the SF should consider the potential damage that may occur during yarding. The operator's follow-up action to prevent adverse disturbance to soils, beds or banks should focus on careful yarding methods. Commonly, yarding has greater potential than felling to damage the protected resources. When encountering the felled and bucked unit before yarding, the SF may issue a written statement for yarding under OAR 629-630-0700(1) Yarding; Cable Equipment Near Waters of the State or 629-630-0800(1) Yarding; Ground-based Equipment Near Waters of the State.

ADMINISTRATION:

Written Plans: Statutory written plans are required for activity within 100 feet of Type F, Type SSBT and Type D streams and significant wetlands. A non-statutory written plan may be required for activity that may impact Type N streams or within 100 feet of large lakes. See OAR 629-605-0170, 629-645-0000, and 629-650-0005. The written plans should address felling practices to protect the resources listed in subsection (2)(b).

The SF should take available opportunities to educate operators that jacking, lining or other directional felling techniques are expected on steep slopes to prevent adverse disturbance to soils, RMAs, stream beds and banks, lakes or significant wetlands.

High Landslide Hazard Locations; Public Safety: If HLHL are present and there is a risk to public safety from shallow, rapidly moving landslides, apply division 623 rules.. OAR 629-623-0600 contains standards for felling and slash removal where public safety is at risk. If HLHL are present, but risks to public safety are not involved, apply OAR 629-630-0500 rules.

Debris Torrent-Prone Streams are designated by the State Forester to include channels and confining slopes that drain watersheds containing high landslide hazard locations that are of sufficient confinement and channel gradient to allow shallow, rapid landslide movement. Minimize slash accumulations in debris torrent-prone stream channels where there is a substantial or intermediate downslope public safety risk, as determined by the State Forester. See guidance for OAR 629-623-0600.

***FELLING; REMOVAL OF SLASH* OAR 629-630-0600**

(2) During felling operations operators shall:

(c) When hardwoods must be felled into or across streams, lakes or significant wetlands, operators shall:

(A) Buck and yard the trees to minimize damage to beds, banks and retained vegetation.

(B) When it can be done consistently with protecting beds and banks, yard hardwood trees or logs away from the water before limbing.

APPLICATION:

Subsection (2)(c) can be used for enforcement. This subsection applies to felling, bucking and yarding hardwood trees. Because hardwoods often lean toward streams, are shorter and have broader crowns, safety and feasibility considerations are likely to interfere with efforts to fell these trees away from streams, lakes and significant wetlands.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state. An unsatisfactory condition exists when the operator could, safely and feasibly, but does not:

Fall hardwoods away from streams, lakes or significant wetlands; or
Buck and yard hardwoods to protect beds, banks and retained vegetation; or
Protect beds and banks by using appropriate yarding practices.

Damage: There is damage when:

1. The *general integrity* of beds, banks and retained vegetation of streams, lakes or significant wetlands is adversely disturbed during felling, bucking or yarding; or
2. Soil is dragged into streams during yarding; or
3. Soil is made subject to erosion within the high water level of any waters of the state; or
4. Significant slope disturbance results in soil erosion into waters of the state; or
5. There is an excessive accumulation of slash (see guidance for OAR 629-630-0600(3)) in streams, lakes, or wetlands due to inadequate methods of felling, bucking, or yarding.

Resource damage is not a prerequisite for taking enforcement action on a procedural violation. The operator, by not submitting a written plan, denies the SF the opportunity to review and comment on the operation. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to apply specific bucking and yarding practices to avoid damage in

any unfinished portion of the operation. Even if felling has not caused a significant impact, the Stewardship Forester should consider the potential disturbance that may occur during yarding.

ADMINISTRATION:

Written Plans: Statutory written plans are required for activity within 100 feet of Type F, Type SSBT and Type D streams and significant wetlands. A non-statutory written plan may be required for activity that may impact Type N streams or within 100 feet of large lakes. See OAR 629-605-0170, 629-645-0000, and 629-650-0005. The written plans should address felling and yarding practices to protect the resources listed in subsection (2)(c).

Falling leaning hardwoods away from streams, lakes, or significant wetlands often is not safe or feasible. When hardwoods are felled into a stream, lake, or significant wetland, these trees must be bucked and yarded to prevent, as much as possible, additional disturbance to the bed, banks, and retained vegetation. Operators are expected to take into account tree form, site conditions, logging system layout and the like and use limbing, bucking, and yarding practices that will minimize disturbance.

Determining compliance may be difficult. During pre-operation inspections, the SF and the operator may be able to determine if it is safe and practical to fell most hardwoods away from streams, lakes or wetlands. Where pre-operation inspections cannot be conducted, it is important to inform the operator of these felling, bucking, and yarding requirements before felling starts.

High Landslide Hazard Locations; Public Safety: If HLHL are present and there is a risk to public safety from shallow, rapidly moving landslides, apply division 623 rules. OAR 629-623-0600 contains standards for felling and slash removal where public safety is at risk. If HLHL are present, but risks to public safety are not involved, apply OAR 629-630-0500 rules.

Debris Torrent-Prone Streams are designated by the State Forester to include channels and confining slopes that drain watersheds containing high landslide hazard locations that are of sufficient confinement and channel gradient to allow shallow, rapid landslide movement. Minimize slash accumulations in debris torrent-prone stream channels where there is a substantial or intermediate downslope public safety risk, as determined by the State Forester. See guidance for OAR 629-623-0600.

<u>FELLING; REMOVAL OF SLASH</u> OAR 629-630-0600

(3) Operators shall minimize the effects of slash that may enter waters of the state during felling, bucking, limbing or yarding by:

(a) Removing slash from Type F, Type SSBT and Type D streams, lakes and significant wetlands as an ongoing process (removal within 24 hours of the material entering the stream) during the harvest operation.

<u>APPLICATION</u>:

Subsection (3)(a) can be used for enforcement. Both subsection (3)(a) and subsection(3)(b) address lakes and wetlands, but they address different stream, lake, and wetland types. Use subsection (3)(a) for Type F, Type SSBT and D streams, large lakes, other lakes with fish larger than one-half acre and significant wetlands. Apply subsection (3)(b) to Type N streams, other lakes with no fish and other wetlands greater than one-quarter acre.

Subsection (3)(a) can be used for enforcement. Use subsection (3)(a) for Type F, Type SSBT and Type D streams, lakes with fish and significant wetlands within 24 hours for slash removal. Apply subsection (3)(b) for Type N streams, other lakes with no fish and other wetlands greater than one-quarter acre at end of operation for slash removal.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition exists when felling or yarding operations along Type F, Type SSBT or Type D streams, lakes or significant wetlands are depositing slash below high water levels without removing it as an ongoing process. **Note:** Small amounts of slash, a few branches scattered along a stream reach for example, are considered incidental and do not constitute an unsatisfactory condition.

<u>Damage</u>: There is damage when slash (more than incidental) has not been removed in an ongoing fashion and within approximately 24 hours after the material has entered the stream, lake or significant wetland, or when slash has been transported out of the unit by stream flow. The presence of a few, scattered branches does not constitute damage. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

<u>Written Statement of Unsatisfactory Condition</u>: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to:

1. Remove slash from within the high water level as an ongoing process within approximately 24 hours; and/or
2. Remove slash immediately from waters if the slash is being, or can be, transported by stream flow.

ADMINISTRATION:

Subsection (3)(a) applies when the operator gets slash in Type F, Type SSBT and Type D streams, lakes or significant wetlands, whether unintentionally or carelessly. When improper felling causes excessive slash accumulations in these streams, the SF may take enforcement action under OAR 629-630-0600 (2)(a) through (c) and use this subsection to direct repair of the accumulation if necessary. If slash enters Type F, Type SSBT and Type D streams, lakes or significant wetlands in spite of the operator's best prevention efforts, removal within approximately 24 hours is required to comply with this subsection. Judgment should be applied in enforcing this 24 hour provision by appropriate discussion of proposals for alternate timing practices that are both protective of water quality and operationally practical.

Note: Minimize the expense of slash removal by careful felling, bucking, yarding, and decking.

Retain naturally occurring wood in the channel that existed prior to the operation.

Proper planning in felling, bucking, and yarding trees will limit the amount of slash in the stream. Apply the preventive felling practices in sections (1) and (2) of this rule or devise methods producing equivalent results.

Note: Avoid decking logs in Type N streams, in order to maintain the integrity of banks, limit slash accumulation, and meet the vegetation retention requirements.

High Landslide Hazard Locations; Public Safety: If HLHL are present and there is a risk to public safety from shallow, rapidly moving landslides, apply division 623 rules. OAR 629-623-0600 contains standards for felling and slash removal where public safety is at risk. If HLHL are present, but risks to public safety are not involved, apply OAR 629-630-0500 rules.

Debris Torrent-Prone Streams are designated by the State Forester to include channels and confining slopes that drain watersheds containing high landslide hazard locations that are of sufficient confinement and channel gradient to allow shallow, rapid landslide movement. Minimize slash accumulations in debris torrent-prone stream channels where there is a substantial or intermediate downslope public safety risk, as determined by the State Forester. See guidance for OAR 629-623-0600.

<u>FELLING; REMOVAL OF SLASH</u> OAR 629-630-0600

(3) Operators shall minimize the effects of slash that may enter waters of the state during felling, bucking, limbing or yarding by:

(b) Not allowing slash to accumulate in Type N streams, lakes or wetlands in quantities that threaten water quality or increase the potential for mass debris movement.

<u>APPLICATION</u>:

Subsection (3)(b) can be used for enforcement. Both subsection (3)(b) and subsection (3)(a) address lakes and wetlands, but they address different stream, lake, and wetland types. Use subsection (3)(b) for Type N streams, other lakes with no fish and other wetlands greater than one-quarter acre. Apply subsection (3)(a) to Type F, Type SSBT and D streams, to large lakes and other lakes larger than one-half acre with fish, and to significant wetlands.

<u>COMPLIANCE</u>:

Subsection (3)(b) applies to streams only as defined in the Forest Practice rules. Headwalls, swales, gullies, or draws without a defined channel are not considered streams for the purposes of the Forest Practice rules. See OAR 629-600-0100 for the definitions of "channel" and "stream."

Subsection (3)(b) applies whether there is water in the channel at the time of the operation or not. Operators must consider the effects of slash in these waters when water is present and take appropriate preventive action.

<u>Unsatisfactory Condition</u>: There is an unsatisfactory condition when the operator leaves slash in or over the bed and banks of Type N Streams, in other lakes, or in other wetlands (greater than one-quarter acre), and the slash accumulations exceed the standards described below.

<u>Slash Accumulation Standards:</u> Slash left in streams, lakes, or wetlands can reduce dissolved oxygen, alter pH levels, provide excessive nutrients, and/or change channel morphology. To minimize the amount of slash entering streams, operators must apply the preventive felling practices in subsections (1) and (2) of this rule or devise methods producing equivalent results. However, slash often enters Type N streams even if those practices are applied, and slash removal may be required. Because some level of temporary disturbance is unavoidable in harvesting operations, and because slash can provide beneficial functions in streams, lakes, and wetlands in some circumstances, subsection (3)(b) does not require complete removal of slash from all Type N stream reaches, small lakes, and other wetlands.

The following describe the circumstances under which slash must be removed from Type N streams, lakes that do not have fish or that are less than one-half acre with fish, and other wetlands (greater than one-quarter acre).

1. Type N stream reaches of less than 10 percent channel gradient must be left with no more than 50 percent of the bed and banks below the high water level covered by scattered slash; and
2. Slash must not cause ponding (still or nearly still water) of stream water nor may it be allowed to remain in the water in stream reaches that are ponded; and
3. Slash accumulations that cause changes to channel morphology by increasing bank erosion when water is present, must be removed.
4. All slash must be removed from lakes that do not have fish or that are less than one-half acre with fish as an ongoing process and as soon as feasible.
5. In most cases, it is acceptable to leave slash that, in spite of proper felling practices, enters "other" wetlands, but it is not acceptable to push or pile slash into any wetland (see OAR 629-615-0200(4) Mechanical Site Preparation Near Waters of the State).

NOTE: The standards in listed circumstances 1. to 3. above apply independently. For example, if 50 percent of a Type N stream reach is free from slash cover, but some remaining slash is causing ponding in the stream, the operator would be required to remove that slash also.

Damage: There is damage when excessive slash accumulations are not removed from Type N streams, other lakes with no fish or other wetlands greater than one-quarter acre. This must be done as described in the slash accumulation standards of this section by the end of the operation, including seasonal or other extended shutdowns. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to remove the slash from Type N streams, other lakes with no fish or other wetlands greater than one-quarter acre:

1. When slash removal from a lake is not being conducted as an ongoing process;
2. Before the end of the operation, including seasonal or other extended shutdowns;
3. Before the slash is transported by stream flow;
4. Before the slash causes bank erosion from increased stream flow; or
5. Before slash in ponded water begins to deteriorate and affect dissolved oxygen levels in the water.

ADMINISTRATION:

The intent of OAR 629-630-0600 is that operators must first apply the preventive felling practices specified in sections (1) and (2). Preventive felling practices are required by the rule in order to ensure that slash will not accumulate in quantities that affect water quality or increase the potential effects of mass debris movements. After the preventive felling practices have been properly applied, the residual slash need only be removed from Type N streams, other lakes with no fish, and other wetlands greater than one-quarter acre as required by the slash accumulation standards.

RMA Protection: For Type N Streams with RMAs, operators must maintain the *general integrity* of the RMAs during felling, bucking and limbing. Efforts to protect RMAs during these

operations should also minimize slash accumulations in wet or dry stream channels to the standards described.

Felling: Take appropriate opportunities to educate operators in planning felling operations so that slash does not accumulate in Type N steams, other lakes with no fish, or other wetlands greater than one-quarter acre. Proper felling can avoid an unsatisfactory condition and damage. When improper felling practices result in an unsatisfactory condition and damage, enforcement action may be taken under OAR 629-630-0600(2)(a) through (c) along with this subsection, (3)(b).

Bucking, Limbing and Yarding: Tree tops that are bucked and left in the stream or below the high water level can become troublesome slash accumulations. Limbing trees that are improperly felled into or across Type N streams, other lakes with not fish or other wetlands greater than one-quarter acre compounds the slash accumulations. Whole tree yarding, or other methods that remove limbs and tops from channels, other lakes, and other wetlands are recommended to minimize slash accumulations.

Retain naturally-occurring wood that existed in the channel prior to the operation.

Slash Removal Standards, as noted in Forest Practices Note 11, Type N Streams, Limiting Disturbance and Slash Accumulation and guidance for OAR 629-623-0600(3) for debris torrent-prone streams. Slash left in streams, lakes, or wetlands can reduce dissolved oxygen, alter pH levels, provide excessive nutrients, and/or change channel morphology. Slash must be removed from wet or dry Type N streams, other lakes with no fish and other wetlands greater than one-quarter acre, apply each independently:

1. Stream gradients 10 percent or less, establish at least 50 percent of the bed and banks of the stream reach free from slash cover. Slash may be left scattered on the remaining portions of the stream within the unit.

2. All stream gradients, prevent ponding of stream water, (still or nearly still water).

3. All stream gradients, remove slash as appropriate so as to not increase the risk of bank erosion when water is present.

4. Debris torrent-prone streams gradients greater than 10 percent, remove all slash piles (pile-like accumulations), where the State Forester determined there is a downslope public safety risk.

5. Debris torrent-prone streams, place all slash removed in stable locations above the high water level, which is generally beyond 25 feet of the stream, where the State Forester determined there is a downslope public safety risk.

6. All lakes, remove slash as an on-going process and as soon as feasible.

Example. If 50 percent of a Type N stream reach is free from slash cover, but some remaining slash is causing ponding in the stream, the operator would be required to remove that slash also.

Debris Torrent-Prone Streams are designated by the State Forester to include channels and confining slopes that drain watersheds containing high landslide hazard locations that are of sufficient confinement and channel gradient to allow shallow, rapid landslide movement. Minimize slash accumulations in debris torrent-prone stream channels where there is a substantial or intermediate downslope public safety risk, as determined by the State Forester. See guidance for OAR 629-623-0600.

Debris Movements: Debris movements result from shallow soils that come loose and slide off of steep slopes. This information has been developed in the years since adoption of this rule. We no longer believe that slash in channels is a primary cause of debris movements. Therefore, slash is not required to be removed from small Type N stream channels for the purpose of limiting the initiation of debris movements **unless the slash accumulation is actually causing water to back up the channel above it or water is eroding the general integrity of stream beds and banks**. Preventive felling practices are required by subsection (2) in order to ensure that slash will not accumulate in quantities that might increase the potential effects of mass debris movements.

High Landslide Hazard Locations; Public Safety: If HLHL are present and there is a risk to public safety from shallow, rapidly moving landslides, apply division 623 rules. OAR 629-623-0600 contains standards for felling and slash removal where public safety is at risk. If HLHL are present, but risks to public safety are not involved, apply OAR 629-630-0500 rules.

FELLING; REMOVAL OF SLASH OAR 629-630-0600

(3) Operators shall minimize the effects of slash that may enter waters of the state during felling, bucking, limbing or yarding by:

(c) Placing any slash that is removed from streams, lakes, or wetlands above high water levels where it will not enter waters of the state.

APPLICATION:

Subsection (3)(c) can be used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when slash that is removed from any stream, lake or wetland is placed where it may be picked up by average annual high flows.

Damage: There is damage when the unsatisfactory condition leads to the re-entry of slash into the water of any stream, lake or wetland. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to place slash above the high water level.

ADMINISTRATION:

OARs 629-630-0600(3)(a) and (b) require operators to remove slash from certain waters of the state. This subsection further requires placing the slash far enough above average annual high water levels that it will not re-enter the water of the stream, lake or wetland. Generally, this is several feet above the average annual high water level.

High Landslide Hazard Locations; Public Safety: If HLHL are present and there is a risk to public safety from shallow, rapidly moving landslides, apply division 623 rules. OAR 629-623-0600 contains standards for felling and slash removal where public safety is at risk. If HLHL are present, but risks to public safety are not involved, apply OAR 629-630-0500 rules.

Debris Torrent-Prone Streams are designated by the State Forester to include channels and confining slopes that drain watersheds containing high landslide hazard locations that are of sufficient confinement and channel gradient to allow shallow, rapid landslide movement. Minimize slash accumulations in debris torrent-prone stream channels where there is a substantial or intermediate downslope public safety risk, as determined by the State Forester. See guidance for OAR 629-623-0600.

YARDING; CABLE EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0700

(1) Operators shall maintain the purposes and functions of vegetation required to be retained in riparian management areas and minimize disturbance to beds and banks of streams, lakes, all wetlands larger than one-quarter acre, and retained vegetation during cable yarding operations.

APPLICATION:

Section (1) may be used for enforcement when cable yarding causes damage in ways not specifically addressed by section (3) through (5).

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when yarding operations damage the required vegetation in the RMA or causes preventable, unnecessary disturbance to the beds and banks of water resources. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition exists and results in the required RMA components are removed, or damaged to the extent that the intended functions are no longer provided. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Examples of damage include reduction of potential shade, future large wood supply, and/or sediment-filtering capability of the RMA.

Resource damage is not a prerequisite for taking enforcement action related to failure to submit a written plan. The operator, by not submitting a written plan, denies the SF the opportunity to review and comment on the operation.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to revise the yarding plan to utilize alternatives to avoid damaging the required vegetation in the RMA or the beds and banks of the water resources.

ADMINISTRATION:

Section (1) provides the water resource protection objectives for cable yarding.

Written Plans: Statutory written plans are required for activity within 100 feet of Type F, Type SSBT and Type D streams and significant wetlands. A non-statutory written plan may be required for activity that may impact Type N streams or within 100 feet of large lakes. See OAR 629-605-0170, 629-645-0000, and 629-650-0005. The written plans should address yarding practices to protect the resources listed in subsection (1).

Downed wood referred to in section (1) is defined as trees or portions of trees that have fallen naturally. Slash in contrast, is defined as trees or portions of trees that have fallen as a result of

harvesting operations.

Recovery of trees that enter an RMA, stream, lake or wetland - whether intentionally (leaning hardwoods) or inadvertently ("It got away") must maintain the general integrity of the required vegetation in the RMA while minimizing disturbance to the beds and banks of streams, lakes and wetlands greater than ¼ acres.

If the functions of the RMA, soil or understory vegetation cannot be reasonably maintained or disturbance to bed and banks cannot be minimized during any tree recovery efforts, the operator should retain the felled tree. If there is disturbance during the tree recovery, take enforcement action using a written statement of unsatisfactory condition or citation, depending on whether the level of disturbance crossed the line into "damage."

YARDING; CABLE EQUIPMENT NEAR WATERS OF THE STATE 629-630-0700

(2) Operators shall minimize the yarding of logs across streams, lakes, significant wetlands, and other wetlands greater than one-quarter acre whenever harvesting can be accomplished using existing roads or other practical alternatives.

APPLICATION:

Section (2) may be used for enforcement. Determination of rule compliance should normally be based on section (3) through (5), and the adequacy of required leave vegetation.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when an operator yards across waters or wetlands when there are available existing roads on both sides of the protected area, or other alternatives that could be readily employed. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs if unsatisfactory conditions described in section (3) through (5) guidance arise. Enforcement action under section (2) is possible. However, enforcement under section (3) through (5) generally serves the same purpose. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to revise the yarding plan to utilize alternatives to avoid yarding over protected areas.

ADMINISTRATION:

Section (2) provides information for the landowner and operator when planning operations. Cable yarding across streams, lakes, or wetlands is an acceptable practice if it results in less road construction and is conducted with equipment that can yard trees over the RMA or through narrow, widely spaced corridors.

When it is practical for operators to yard away from waters of the state, they should do so. If an operator can yard away but proposes not to, the operator must obtain an approved PFAP. The level of impact associated with cable yarding over the water or wetland should be lower than the impact allowed under section (5) of this rule.

YARDING; CABLE EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0700

(1) Operators may use yarding corridors through retained streamside trees as long as the numbers and widths of yarding corridors are minimized. Operators shall submit a written plan to the State Forester when yarding across any of the waters listed in subsection (a) through (f) of this section:

(a) Type F streams;
(b) Type SSBT streams;
(c) Type D streams;
(d) Large or medium Type N streams;
(e) Lakes; or
(f) Significant wetlands

APPLICATION:

Section (3) can be used for enforcement.

A **statutory** written plan is required to yard across Type F, Type SSBT, and Type D streams and significant wetlands, under ORS 527.670(3). As allowed in that statute, the State Forester has waived the requirement for such plans for certain activities that take place outside the stream RMA; see OAR 629-605-0170(4) and Forest Practices Technical Note Number 10, Waivers of Statutory Written Plan

The requirement for a **non-statutory** written plan under section (3) may be waived if the SF determines that the formal plan process is not needed to help ensure resource protection. Consideration of the waiver begins when the operator requests the waiver. Unless the department grants the waiver, a **non-statutory** written plan is required and must be submitted before the practice or operation begins.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when any of following situations occur:

(1) Corridors (see definition below) through the RMA are unnecessarily closely spaced or of greater than minimum widths;
(2) An operator yards across any Type F, Type SSBT or Type D streams or significant wetland without first submitting a statutory written plan which describes the accurate location and size of yarding corridors.
(3) An operator yards across any medium or large Type N stream, or large lake without first submitting, or receiving a waiver of, a required non-statutory written plan which describes the accurate location and size of yarding corridors.

Damage: Damage occurs when the unsatisfactory condition exists and results in RMA components, required to be retained, being removed, or damaged to the extent that the intended functions for which they have been retained are no longer provided. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Examples of damage include reduction of potential shade, future large wood supply, and/or sediment-filtering capability of the RMA.

Resource damage is not a prerequisite for taking enforcement action related to failure to submit a written plan. The operator, by not submitting a written plan, denies the SF the opportunity to review and comment on the operation.

For statutory written plan violations on Type F, Type SSBT or Type D streams or significant wetlands take enforcement action under OAR 629-605-170(2), (3), or (5), as appropriate, rather than this rule.

For non-statutory written plan violations on large lakes take enforcement action under OAR 629-650-0005 rather than this rule.

For non-statutory written plan violations on large or medium Type N streams, take enforcement action under this rule.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. For written plan violations, a written statement of unsatisfactory condition may be issued instead of a citation when for specific conditions listed in OAR 629-670-0125.

ADMINISTRATION:

Section (3) allows operators to use cable logging corridors through the RMA and where necessary, to cut trees within them. Generally, cable yarding corridors should be spaced a minimum of 100 feet apart, and their width should not exceed 20 feet.

Operators should use natural gaps in the RMA for corridors whenever possible. A corridor is any portion of a cable yarding road (location where cables are strung) where the cables cross a stream, lake, or significant wetland. Corridors sometimes, but not always, require the felling of trees adjacent to the cable lay(s).

Statutory written plans are required for operations within 100 feet of Type F, Type SSBT and Type D streams, large lakes, and significant wetlands. Non-statutory written plans should also be required when corridor trees are removed from the RMA of medium and large Type N streams. These written plans should address corridor spacing, corridor width, and methods the operator will use to protect retained vegetation when changing yarding roads.

Damage or removal of trees within the minimum corridor width is to be expected. **Trees outside the corridor must be left with adequate crowns to provide original canopy cover** (excepting the interior of rub trees).

Note: The use of corridors cannot reduce conifer levels below rule standards. However, if the RMA contains fewer conifers than the standard management target, corridors are nonetheless allowed. Those conifers felled for the corridor must either be replaced, left on the ground, or placed or felled in the stream. If corridor trees are felled into the RMA and meet basal area credit requirements (species, length, and diameter), the RMA can be left with conifers meeting the active management target. Where less than the active management target exists, corridor trees cannot be removed, and

Although not specifically addressed by section (3), hanging cables across streams when yarding only one side of a stream would also require a written plan. Removal of streamside trees should not be necessary in such cases, but the physical components of the RMA may be moved, disturbed, or otherwise altered by the operation.

Example: A medium Type N stream requires a non-statutory written plan when cables are strung through or over the RMA or any yarding is done across or over the RMA.

<u>YARDING; CABLE EQUIPMENT NEAR WATERS OF THE STATE</u> OAR 629-630-0700

(2) When yarding across any of the waters listed in subsection (a) through (f) of this section is necessary, it shall be done by swinging the yarded material free of the ground in the aquatic areas and riparian areas.

(a) Type F streams;

(b) Type SSBT streams;

(c) Type D streams;

(d) Large or medium Type N streams;

(e) Lakes; or

(f) Significant wetlands

<u>APPLICATION</u>:

Section (4) can be used for enforcement.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition exists when there is evidence of log turns not being suspended over the channel or riparian area. Single log turn touching the ground or falling into protected areas should not be considered a violation. Gouging in stream banks or destruction of vegetative components is evidence of an unsatisfactory condition, as is soil or debris deposited below the normal high water level by yarding. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

<u>Damage</u>: Damage occurs when the unsatisfactory condition results in required soil or vegetative RMA components being damaged to the extent that the intended functions are no longer provided. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

<u>Examples</u> of damage include reducing: a) potential shade; b) future large wood supply; and c) sediment-filtering capability of the RMA.

Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state.

Resource damage is not a prerequisite for taking enforcement action related to failure to submit a written plan. The operator, by not submitting a <u>written plan</u>, denies the SF the opportunity to review and comment on the operation.

There is also damage when required vegetative functions are adversely disturbed.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to reduce the yarding turn size or take other measures to increase deflection over the RMA. Some repair may be necessary to prevent damage.

ADMINISTRATION:

Using proper equipment, cable yarding across streams is a desirable practice if it results in less road construction, and is conducted with equipment that can yard trees over the RMA or through narrow, widely spaced RMA corridors. Skyline systems with slack pulling ability and sufficient power can generally be used with little impact to riparian resources, given proper landing location and unit layout.

The written plan must address suspension of logs above the aquatic and riparian areas. If there is question whether suspension is adequate, the SF should request the operator to provide yarding profiles and load analyses for the written plan.

YARDING; CABLE EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0700

(5) Cable yarding across streams classified as small Type N or other wetlands greater than one-quarter acre shall be done in ways that minimize disturbances to the stream channel or wetland and minimize disturbances of retained streamside vegetation.

APPLICATION:

Section (5) can be used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when logs have been cable yarded along or across the wet or dry stream channel or the wetland or the retained streamside vegetation. Evidence includes gouging of the bed or banks, or soil dragged into the channel by yarding. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in retained streamside vegetation being adversely disturbed over 30 percent or more of the stream length within the harvest unit.

Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to achieve the suspension required to prevent damage to the bed and banks of streams or wetlands. Some preventive action may be necessary to prevent damage from occurring.

ADMINISTRATION:

“Minimize disturbance" for cable yarding over small Type N streams means preventing the leading end of the log from dragging across and gouging the ground, or one-end suspension.

YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0800

(1) Operators shall maintain the purposes and functions of vegetation required to be retained in riparian management areas, and minimize disturbances to beds and banks of streams, lakes, all wetlands larger than one-quarter acre, and retained vegetation during ground-based yarding operations.

APPLICATION:

Section (1) can be used for enforcement when ground-based yarding operations cause damage in ways not specifically addressed by section (2) through (9).

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when yarding operations damage the required vegetation in the RMA or causes preventable, unnecessary disturbance to the beds and banks of water resources. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition exists and results in the required RMA components are removed or damaged to the extent that the intended functions are no longer provided. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Examples of damage include reduction of potential shade, future large wood supply, and/or sediment-filtering capability of the RMA.

Resource damage is not a prerequisite for taking enforcement action related to failure to submit a written plan. The operator, by not submitting a written plan, denies the SF the opportunity to review and comment on the operation.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to revise the yarding plan to utilize alternatives to avoid damaging the required vegetation in the RMA or the beds and banks of the water resources.

ADMINISTRATION:

Section (1) provides the soil, vegetation, and water resource protection objectives for ground-based yarding operations.

Written Plans: Statutory written plans are required for activity within 100 feet of Type F, Type SSBT and Type D streams and significant wetlands. A non-statutory written plan may be required for activity that may impact Type N streams or within 100 feet of large lakes. See OAR

629-605-0170, 629-645-0000, and 629-650-0005. The written plans should address yarding practices to protect the resources listed in subsection (1).

Downed wood referred to in section (1) is defined as trees or portions of trees that have fallen naturally. Slash in contrast, is defined as trees or portions of trees that have fallen as a result of harvesting operations.

Recovery of trees that enter an RMA, stream, lake or wetland - whether intentionally (leaning hardwoods) or inadvertently ("It got away") must maintain the general integrity of the required vegetation in the RMA while minimizing disturbance to the beds and banks of streams, lakes and wetlands greater than ¼ acres.

If the functions of the RMA, soil or understory vegetation cannot be reasonably maintained or disturbance to bed and banks cannot be minimized during any tree recovery efforts, the operator should retain the felled tree. If there is disturbance during the tree recovery, take enforcement action using a written statement of unsatisfactory condition or citation, depending on whether the level of disturbance crossed the line into "damage."

YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0800

(2) Operators shall not operate ground-based equipment within any stream channel except as allowed in the rules for temporary stream crossings.

APPLICATION:

Section (2) can be used for enforcement action.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when equipment has operated within or across any wet or dry stream channel except as allowed with temporary crossing in section (4) or (5) of this rule. Evidence may include gouging or rutting of the bed or banks, or soil brought into the channel. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary disturbance to the wet or dry stream channel. Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

Resource damage is not a prerequisite for taking enforcement action related to failure to submit a written plan. The operator, by not submitting a written plan, denies the SF the opportunity to review and comment on the operation.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to cease further crossings until properly planned and constructed crossings described in sections (4) and (5) are identified. Some preventive action may be necessary to stop damage from occurring.

ADMINISTRATION:

Section (2) applies to all ground-based equipment used for moving or yarding logs. When it is necessary to cross a stream, ground-based equipment shall only operate on properly planned and constructed crossings.

When equipment is being used or has been used to build a landing or any portion of a landing in a channel, use OAR 629-630-0200 (2) for enforcement action.

Note: If the operation results in the straightening or shortening of any wet or dry stream channel, or causes changes to the stream channel consider use of OAR 629-660-0040 for enforcement action.

<u>YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE</u> OAR 629-630-0800

(3) Operators shall minimize the number of stream crossings.

<u>APPLICATION</u>:

Section (3) can be used for enforcement.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition exists when multiple crossings are used when topography and proper planning would have required fewer crossings. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

<u>Damage</u>: Damage occurs when the unsatisfactory condition results in preventable and unnecessary disturbance to the bed, banks, or water quality. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage occurs when the unsatisfactory condition results in preventable and unnecessary sediment or debris entering a wet or dry stream channel or waters of the state.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

<u>Written Statement of Unsatisfactory Condition</u>. Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to revise the yarding plan to limit the number of stream crossings. Some preventive action may be necessary to stop damage from occurring.

<u>ADMINISTRATION</u>:

"More than minimum" is primarily a function of topography. Stream crossings should be used only when **absolutely necessary**. With good planning by the operator, it is often possible to limit the number of temporary stream crossings to just one.

<u>YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE</u> OAR 629-630-0800

(4) For crossing streams that have water during the periods of the operations, operators shall:

(a) Construct temporary stream crossing structures such as log crossings, culvert installations, or fords that are adequate to pass stream flows that are likely to occur during the periods of use. Structures shall be designed to withstand erosion by the streams and minimize sedimentation.

<u>APPLICATION</u>:

Subsection (4)(a) can be used for enforcement. Subsection (4)(a) requires the use of "temporary crossing structures" when ground-based yarding equipment crosses streams that are likely to have flow during the expected time of the operation.

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state. An unsatisfactory condition exists when:

1. Structures are either not installed or are inadequate to pass expected stream flows.
2. Stream flow has eroded the crossing structure.
3. The structure has altered or diverted stream flow, resulting in erosion of the bed or banks.
4. Water is backed up (ponded) by the fill, threatening or causing fill saturation or overtopping of the fill.

<u>Damage</u>: Damage occurs when the unsatisfactory condition results in preventable and unnecessary disturbance to the bed, banks, and associated water quality. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state.

Resource damage is not a prerequisite for taking enforcement action related to failure to submit a written plan. The operator, by not submitting a <u>written plan</u>, denies the SF the opportunity to review and comment on the operation.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

<u>Written Statement of Unsatisfactory Condition</u>. Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to design and construct appropriate stream crossings to prevent

unnecessary sedimentation. Some preventive action may be necessary to stop damage from occurring.

ADMINISTRATION:

Suitable temporary crossing structures vary from improved fords to bridges. The appropriate structure for the site depends on the stream size, time of year, presence of fish, and volume of logs to be brought across the crossing. Examples of temporary stream crossing structures:

- Log crib. Logs placed parallel to the culvert in the stream to allow water and fish passage.
- Log crib without culvert: Single layer of logs placed parallel within the stream channel.
- Rock fill. Non-organic fill may be used with a culvert for water and fish passage.
- Combination. Log crib and rock fill with culvert in the fill portion with seasonal high water and soil fill layered above the seasonal high water flow.
- Bridge. Logs bound by cable and extended beyond the stream banks.
- Bridge. I-beams with wood planking extended beyond the stream banks.
- Ford. Used rarely for yarding. Requires stable banks, stream bed and one-end suspension.

Note: Remove fill material to reestablish the pre-operation stream bed and bank conditions. Culverts must be long enough to allow 1 ½ to 1 natural fill slope.

In those areas where summer thunderstorms are the primary source of high stream flows, operators should install culverts or other drainage structures large enough to pass potential peak flows. **Note: Special attention should be given to areas that have recently burned**, as large thunderstorms and high flows appear to be more common in these locations.

Example: An operator plans to use an existing low-water ford crossing on a Type F stream to get his track equipment across the stream to pre-bunch logs for a cable yarding operation. A statutory written plan is required per OAR 629-605-0170(2). The plan must address:

- Timing of the crossing (seek ODFW's input if outside the in-stream work guidelines),
- Adequacy of the streambed to support the equipment crossing,
- Necessity of importing rock fill material or temporary placement of a log crib,
- Prevention of sedimentation from the approaches to the crossing and
- Prevention of petroleum contamination into the stream during crossings.

Note: The temporary crossing must not impair fish movement on Type F or Type SSBT streams, OAR 629-630-0800(d).

Subsection (4)(e) addresses timely removal of all temporary crossings.

See additional discussion on fords and fish passage in Forest Practices Technical Note 4.

YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0800

(4) For crossing streams that have water during the periods of the operations, operators shall:

APPLICATION:

Subsection (4)(b) is used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when temporary crossings for ground-based equipment are located in narrow canyons, incised channels, actively eroding or exposed soil banks, wetlands, or slide areas. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in preventable and unnecessary disturbance to the bed, banks, or water quality. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition. Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to locate appropriate stream crossings that minimize cuts and fills or other disturbances to the stream banks. Some preventive action may be necessary to stop damage from occurring.

ADMINISTRATION:

Compliance is achieved when the operator makes an on-the-ground evaluation of all the practical alternatives and selects the crossing which least disturbs stream banks. The operator must choose stream crossing locations in consideration of the soil properties, condition of the stream bank, channel form, and the ability to get the skid trail away from the stream as quickly as possible.

Operators should avoid actively eroding or exposed soil streambanks area. Crossing should be located where there is a single narrow channel rather than multiple braided or side channels.

<u>YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE</u> OAR 629-630-0800

(4) For crossing streams that have water during the periods of the operations, operators shall:

(c) Minimize the volume of material in any fills constructed at a stream crossing. Fills over eight feet deep contain such a large volume of material that they can be a considerable risk to downstream beneficial uses should the material move downstream by water. For any fill for a temporary crossing that is over eight feet deep, operators shall submit to the State Forester a written plan that includes a description of how the fills would be constructed, passage of water, and the length of time the fills would be in the stream.

<u>APPLICATION</u>:

Subsection (4)(c) is used for enforcement.

A **statutory** written plan is required to cross Type F, Type SSBT or Type D streams, and significant wetlands, ORS 527.670(3) and cannot be waived by the SF. OAR 629-605-0170.

The requirement for a **non-statutory** written plan under this rule may be waived if the SF determines that the formal plan process is not needed to help ensure resource protection. Consideration of the waiver begins when the operator requests the waiver. Unless the SF grants the waiver, a **non-statutory** written plan is required and must be submitted before the practice or operation begins. OAR 629-605-170(10).

<u>COMPLIANCE</u>:

<u>Unsatisfactory Condition</u>: An unsatisfactory condition exists when a temporary crossing fill is constructed <u>over eight feet deep</u> and a required written plan for such a deep fill was not submitted or waived. An unsatisfactory condition exists when the volume of the fill is greater than reasonably necessary. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

<u>Damage</u>: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Resource damage is not a prerequisite for taking enforcement action on a procedural violation. The operator, by not submitting a <u>written plan</u>, denies the SF the opportunity to review and comment on the operation.

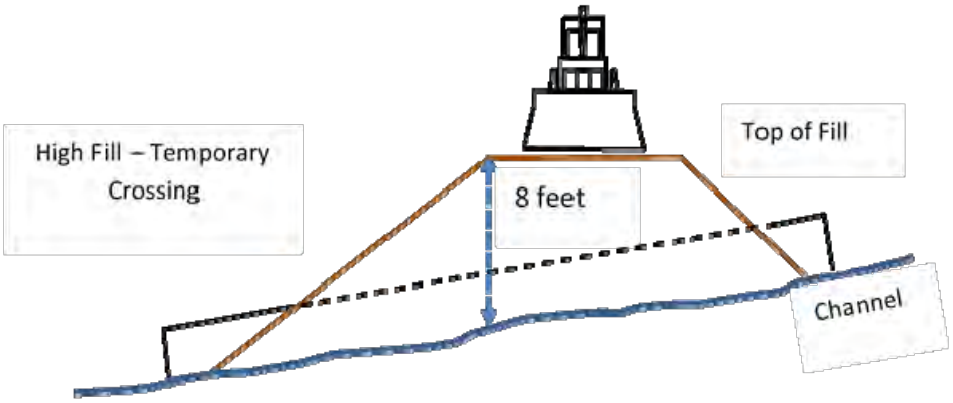
Written Statement of Unsatisfactory Condition: Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to stabilize or remove the fill. Some preventive action may be necessary to stop damage from occurring.

Under specific conditions listed in OAR 629-670-0125 (Using the Written Statement of Unsatisfactory Condition for Noncompliance with Procedural Rules), a written statement of unsatisfactory condition may be issued instead of a citation.

ADMINISTRATION:

Subsection (4)(c) requires a written plan for any temporary stream crossing fill which is **over eight feet**, including small Type N streams and that the volume of fill be minimized. The width of the fill must be as narrow as safety considerations permit. Fills should not be used as waste areas for excavated material from skid trail construction. Measure the fill depth for a temporary stream crossing in the same manner as a permanent stream crossing; see guidance for OAR 629-625-0320(1)(b)(B).

Measure Fill Height. Measure the vertical distance from the running surface of the downhill side of the fill to the stream bed. There are several methods that can be used to calculate the fill depth using a measuring tape and clinometer or a laser range finder. Consult with the Forest Practices staff as needed.



Where to measure fill height.

A field inspection of the operation is required to evaluate the need for any high fills. If an alternative structure or location is feasible, the operator should be advised to construct the crossing at such location.

YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0800

(4) For crossing streams that have water during the periods of the operations, operators shall:

(d) Design temporary structures so that fish movement is not impaired on Type F or Type SSBT streams.

APPLICATION:

Subsection (4)(d) is used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when a temporary crossing structure on a Type F or Type SSBT stream does not allow for fish passage. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage exists when a stream crossing structure on a Type or Type SSBT stream that does not allow for fish passage and remains in place during periods of possible fish movement. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

Resource damage is not a prerequisite for taking enforcement action related to failure to submit a written plan. The operator, by not submitting a written plan, denies the SF the opportunity to review and comment on the operation.

Written Statement of Unsatisfactory Condition. Issue a written statement of unsatisfactory condition when corrective action is feasible and practical prior to damage occurring. Direct the operator to remove the temporary structure or to alter it to allow for fish passage before periods of possible fish movement.

ADMINISTRATION:

Upstream movement by anadromous fish to reach spawning grounds is usually not a consideration for the period of time a temporary crossing structure is in place. However, juvenile and adult fish may need to move upstream or downstream to seek cool water refuges. The presence and movement of resident fish must also be considered. The temporary crossing structure does not have to meet the 50-year return interval.

Refer to Forest Practices Technical Note 4, Fish Passage for the same design criteria for temporary skid trail crossings if a culvert is going to be used.

Note: Follow ODFW's in-water work period guidance to minimize impact to aquatic species during installation and removal of structures. Short bridges (including log crib stream crossings) are preferred to protect the natural stream bottom.

The statutory written plan should address fish passage through temporary crossings on Type F or Type SSBT streams, OAR 629-605-0170. Consult with the Forest Practices staff to determine noncompliance, damage, and enforcement under this subsection.

YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0800

(4) For crossing streams that have water during the periods of the operations, operators shall:

(e) Remove all temporary stream crossing structures immediately after completion of operations or prior to seasonal runoff that exceeds the water carrying capacity of the structures, whichever comes first. When removing temporary structures, operators shall place fill material where it will not enter waters of the state.

APPLICATION:

Subsection (4)(e) is used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when a temporary crossing structure has not been removed after completion of the operation or prior to seasonal run high stream flows that exceed the capacity of the crossing, whichever comes first, provided there is no damage. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. Damage occurs if there is evidence of high stream flows eroding the crossing structure, bed, or banks as a result of the unsatisfactory condition. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition. Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to immediately remove the crossing.

ADMINISTRATION:

All soil, structural material, and fine slash used in the crossing and below the high water level must be removed and placed in stable locations above the 100 year flood level. Banks should be shaped to a 1 ½ to 1 natural fill slope to avoid creating unstable, undercut or over-steepened banks.

Example: A horizontal distance of 3 feet and vertical distance is 2 feet equals a slope of 1 ½: 1.

Note: Follow ODFW's in-water work period guidance to minimize impact to aquatic species during installation and removal of structures.

YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0800

(5) For stream crossings where the channels do not contain water during the periods of the operations, operators are not required to construct temporary crossings as long as disturbances are no greater than what would occur if structures were constructed. Soil that enters the channels during the yarding operations must be removed after completion of the operation or prior to stream flow, whichever comes first. When removing such materials from the channels, operators shall place the materials in locations where they will not enter waters of the state.

APPLICATION:

Section (5) can be used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition when loose, erodible material associated with the crossing structure is not removed from a crossing or when it is placed where it is likely to enter waters of the state. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a stream channel or waters of the state. An unsatisfactory condition exists when disturbance is not limited. Examples: Adverse disturbance to banks and stream channels caused by ground-based equipment can include soil compaction, track or wheel churning, rutting, and mixing, displacing, or removing soil or stream bed material.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition. Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to remove soil from the channel before stream flow occurs. Other erosion control measures such as grass seeding and mulching may be necessary to prevent damage.

ADMINISTRATION:

Section (5) allows yarding logs across dry stream channels without a temporary crossing structure as long as stream flow does not occur during the operation, the streambed and banks are neither wet nor fragile, and water quality is not damaged when stream flow resumes.

Note: To ensure activity in the dry stream channel does not cause disturbance greater than what would occur if temporary structures were constructed, the operator should provide one-end suspension of logs. Also, placement of a single layer of parallel logs within the stream channel will act as a running surface to protect the stream banks and bed.

If stream flow occurs, whether expected or unexpected, the operator must immediately cease using equipment in the channel and water bar the skid trail approaches on both sides of the crossing. Use of the crossing must cease until a temporary structure is constructed as indicated in section (4), or dry conditions return.

After use of such a stream crossing, the operator must remove all loose soils or logs used to protect the stream bank and bed that are below high water levels and place them above the 100-year flood level. Loose soils include the sides of ruts, bank material which has fallen toward the channel, and any material which falls from tracks or tires.

YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0800

(6) Operators shall construct effective sediment barriers such as water bars, dips, or other water diversion on stream crossing approaches after completion of operations, or prior to rainy season runoff, whichever comes first.

APPLICATION:

Section (6) can be used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when sediment barriers have not been installed in a timely manner. An unsatisfactory condition exists when there is evidence of skid trail runoff directly entering the stream or eroding the crossing approach. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition. Issue a written statement of unsatisfactory condition when corrective action or repair is feasible and practical prior to damage occurring. Direct the operator to construct effective sediment barriers prior to expected runoff events.

ADMINISTRATION:

If a major storm event is forecast, effective sediment barriers should be installed immediately, even if the crossing will continue to be used.

"Effective sediment barriers" means the barriers divert water off the skid trail (not ponding water on the skid trail) and onto non-compacted soil or slash, and sediment in the runoff water is filtered or settled out to keep it out of the stream water. Such structures should be placed a short distance (less than 20 feet) above the high water level (the top of stream bank for high banks, and the edge of floodplain for low banks) so that infiltration or settling is possible. For medium and large streams, sediment barriers should also be placed at the outside boundaries of the RMA.

YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0800

(7) Machine activity near (generally within 100 feet) streams, lakes, and other wetlands greater than one-quarter acre shall be conducted to minimize the risk of sediment entering waters of the state and preventing changes to stream channels. Operators shall only locate, construct, and maintain skid trails in riparian management areas consistent with the harvesting rules.

APPLICATION:

Section (7) can be used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when any skid trail within 100 feet of any stream, lake, or wetland over one-quarter acre has inadequate water bars or other drainage measures. An unsatisfactory condition exists when there is evidence of skid trail runoff directly entering the stream. An unsatisfactory condition exists when skid trails divert wet or dry stream channels because they are too close to streams and are not properly drained. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

Resource damage is not a prerequisite for taking enforcement action related to failure to submit a written plan. The operator, by not submitting a written plan, denies the SF the opportunity to review and comment on the operation.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition. Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to install water bars or other effective drainage measures prior to any expected runoff events.

ADMINISTRATION:

Operators must apply effective sediment barriers near streams, lakes and wetlands to minimize the risk of sediment entering waters of the state.

Operators are responsible for locating streams, lakes, and wetlands in the operation unit prior to commencing activity. Operations must be conducted to minimize disturbance around wetlands, lakes, and streams. Machine activity, associated disturbance, and drainage practices must all combine to minimize erosion and subsequent delivery of sediment to waters of the state. Equipment should be kept as far away from any water as practicable. Logs should be removed by reaching with grapples or pulling winch line.

Note: If ground-based equipment enters and begins to sink into a wetland, it should back out of the wetland immediately and cease work in the immediate area until the boundaries of the wet soil area are identified.

Operators should follow Table 1. guidelines for water bar spacing on skid trails:

Table 1. Maximum Water Bar Spacing in Skid Trails by Soil Type

	Soil Description	
Slope of Skid Trail	**Erodible** (silt, sands, granitics)	**Less Erodible** (loam, gravel, cobble)
5 to 15%	150 feet	300 feet
15 to 35%	100 feet	200 feet
35 to 50%	50 feet	100 feet
Over 50%	25 feet	50 feet

YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0800

(8) Operators shall minimize the amount of exposed soils due to skid trails within riparian management areas. Except at stream crossings, operators shall not locate skid trails within 35 feet of Type F, Type SSBT or Type D streams. Operators shall provide adequate distances between all skid trails and waters of the state to filter sediment from runoff water.

APPLICATION:

Section (8) can be used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when any skid trail results in preventable, unnecessary soil disturbance within any RMA or near any stream, lake, or wetland. An unsatisfactory condition exists when a skid trail is constructed or reconstructed within 35 feet slope distance of the high water level of a Type F, Type SSBT or a Type D stream. An unsatisfactory condition exists when there is evidence of sediment-bearing skid trail runoff directly entering the stream. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope. Refer to the discussion of "soil deterioration" in the guidance for OAR 629-630-0100(1).

Note: Disturbed soils which have been correctly stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate are not considered deteriorated soils. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute adverse soil disturbance or soil deterioration.

Damage exists when skid trails are located within 35 feet of Type F, Type SSBT or D streams without effective measures to prevent sediment-bearing runoff water from entering the stream.

Resource damage is not a prerequisite for taking enforcement action related to failure to submit a written plan. The operator, by not submitting a written plan, denies the SF the opportunity to review and comment on the operation.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the

entry site (a 10% or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition. Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to install water bars or complete other corrective action, such as sub-soiling (where appropriate) prior to expected runoff events. Other erosion control measures including grass seeding and mulching may be necessary to prevent damage.

ADMINISTRATION:

The distance required for effective filtration of sediment is sometimes more than 35 feet (see reference). For Type N streams, all lakes, and all wetlands, noncompliance occurs when the opportunity for effective filtering has been lost. The required setback distance depends on the level of disturbance, soil properties, and slope (see the reference).

A SF may allow use of an existing skid trail which is closer than 35 feet to a Type F, Type SSBT or Type D stream in limited locations if all other feasible harvesting alternatives would result in greater resource damage. Effective drainage must be used to keep sediment-bearing run-off water out of the stream. Placing brush and slash in the trail before use can reduce the amount of exposed soils resulting from yarding operations. Such activity should be described in a statutory written plan under OAR 629-605-0170 and an approved PFAP under, OAR 629-605-0173.

Table 2. Skid Trail Setback Guidelines for Filtering Muddy Runoff

Soil	Slope in percent		
	0 to 35%	**35 to 50%**	**50 to 65%**
Normal	20 feet	35 feet	100 feet
Erodible	35 feet	100 feet	Likely rule violation

Should ruts or exposed subsoils appear when operating closer to the stream than the distances shown in Table 2, the operator should cease operating in the affected areas immediately.

YARDING; GROUND-BASED EQUIPMENT NEAR WATERS OF THE STATE OAR 629-630-0800

(9) Operators shall locate and construct skid trails so that when high stream flow occurs water from the stream will not flow onto the skid trail.

APPLICATION:

Section (9) can be used for enforcement.

COMPLIANCE:

Unsatisfactory Condition: An unsatisfactory condition exists when normal high water levels has entered or is likely to encroach on skid trails. An unsatisfactory condition exists when sediment or debris has entered or is likely to enter a wet or dry stream channel or waters of the state.

Damage: Damage occurs when the unsatisfactory condition results in preventable, unnecessary sediment or debris entering a wet or dry stream channel or waters of the state. There is damage if adverse disturbance has occurred or is likely to occur and cannot be immediately corrected. Damage is adverse soil disturbance by skid trails or ground-based equipment tracks such that water would not likely infiltrate the soil but become channelized or have the potential to move loosened soil or debris downslope.

Damage occurs when the unsatisfactory condition results in preventable effects on channel morphology.

There is damage due to noncompliance with the turbidity water quality standard when forest practices cause a visible increase in turbidity from the water conditions 100 feet upstream of the entry site (a 10 percent or more increase over background turbidity), and it continues for two or more hours in a twenty-four hour period.

Written Statement of Unsatisfactory Condition. Issue a written statement of unsatisfactory condition when corrective action or complete repair is feasible and practical prior to damage occurring. Direct the operator to re-grade the skid trail, construct effective grade reversals, or other effective corrective action prior to expected runoff events.

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ADMINISTRATION:

Compliance is best accomplished when skid trails are kept well above high water levels of any stream. When it is necessary to cross a stream, skid trails should climb away from the channel on both sides. However, this needs to be balanced by grade breaks or reversals, as close as practicable, to minimize the length of trail draining towards the crossing.

Any skid trail located below the 100-year flood levels must contain frequent grade reversals or large rolling dips. Skid trails, which might be covered by flood flows, must not be constructed along the same gradient as the stream. **Grade reversals are essential** when trails are parallel to channels, or when crossing channels.

REFERENCES FOR DIVISION 630:

- Forest Practices Technical Note 2, High Landslide Hazard Locations,
- Forest Practices Technical Note 4, Fish Passage
- Forest Practices Technical Note 7, Avoiding Roads in Critical Locations
- Forest Practices Technical Note 10, Waivers of Statutory Written Plan
- Forest Practices Note 11, Type N Streams, Limiting Disturbance and Slash Accumulation
- Miller, Richard, S. Colbert, L. Morris, NCAIS 2004. Effects of heavy equipment on physical properties of soils and on long-term productivity: a review of literature and current research, Technical Bulletin No. 997,
- Oregon Forest Protection Laws, an Illustrated Manual, Third Edition, OFRI

JACOBS Eric D * ODF

From: BUREN Michael R * ODF
Sent: Wednesday, January 05, 2022 10:22 AM
To: JACOBS Eric D * ODF
Subject: Nordhl, Pre-Notification
Attachments: Nordhl.pdf; Guidance - ground-based operations on steep slope November 7 2018.docx

Eric,

I have conducted a Div. 623 review of the notification. The table and attached map show the summary of my analysis. You had referred the unit to me due to structures below steep slopes. On January 3rd we made a site visit to assess runout near "Home 5".

There will be no harvest modifications required due to Div 623 for Areas B and D (see map). Below Area B there are no structures and below Area D structures are distal to the gulley opening which results in a "Low" public safety risk.

Table 1: Analysis Summary, Nordhl, Pre-Notification
Refer to the map for Area and structure locations.

Area (see map)	High Landslide Hazard locations (HLHL) present?	Downslope Concerns	Exposure Category	Structure/Roads within Further Review Area?	Impact Rating	Downslope Public Safety Risk Level
A	Yes	Home 1	A	Yes	Serious	Substantial
		Shop, shed	C	Yes	Serious	Low
B	No	N/A	N/A	N/A	N/A	N/A
C	Yes	Home 5	A	Yes	Moderate	Intermediate
D	Yes	Home 7, outbuildings	A,C	Yes**	Unlikely	Low
		Home 6, outbuildings	A,C	Yes**	Unlikely	Low
E	Yes	Home 1	A	Yes	Moderate	Intermediate
		Shop, shed	C	Yes	Moderate	Low

Red text indicates issues requiring harvest modifications.
**Note: These structures not on obvious debris fans but it is assumed for sake of analysis.

Required Harvest Modifications for Area A

The attached map titled "Nordhl", shows the location of HLHLs in Area A which need consideration. These areas need to be left timbered and wind firm. Therefore site appropriate buffers may need to be designed to protect the trees on the HLHL locations from blowing down. These additional buffers do not need to be wind firm but are sacrificial, providing stability to the timber on the HLHL locations.

The following guidance should be considered when looking into the wind firmness issue. It is taken from ODF Div 623 guidance: ***Operators should be aware that windthrow may be a factor contributing to shallow, rapidly moving landslides. The operator should consider the wind firmness of trees that are to be left on high landslide hazard locations and will likely need to leave additional trees outside the boundaries of the unharvested area to reduce windthrow hazard to retained trees. Crown and bole characteristics, exposure to prevailing storm winds, topographic effects, relative height of trees, and species mix (conifer/hardwood) should be evaluated when determining harvest unit boundaries when high landslide hazard locations are present.***

The required written plan should have a brief discussion of the reasons behind the design of the additional wind buffers, if they are needed.

Required Harvest Modifications for Area C

The attached map shows the location of HLHLs in Area C which need consideration. HLHLs in Area C should be left timbered. Additional wind firmness is not required by the rules.

Required Harvest Modifications for Area E

The attached map shows the location of HLHLs in Area E which need consideration. HLHLs in Area E are located above an additional partly confined and less steep section of terrain than HLHLs lower down in Area A. Therefore I have applied a public safety risk of Intermediate to those HLHLs resulting in less restrictive requirements. These areas should be left timbered. Additional wind firmness is not required by the rules.

I would recommend all the polygons I have mapped with intermediate public safety risk remain timbered in Areas E and C. A reading of the intermediate-related Div. 623 rules, however, does not require the operator to leave more than one-half of the intermediate HLHL acreage timbered. There has been important discussion over the years that the Intermediate rules lack efficacy, and need revision. If you want more discussion on that let me know, but it would be good to work with the operator to make accommodations to leave these sites.

Notes on cable-assisted, ground-based (tethered) Operations

You had said the operator mentioned the possibility of using tethered machinery. For cable assisted ground-based machinery, slopes over 60% should be avoided in Areas A, C and E, which have downslope public safety concerns. Requests for a Plan for Alternate Practice (PFAP) for cable assisted ground-based operations will not be granted in these basins (guidance) for operation on slopes >60%. Additional resource-based issues exist for cable assist operations in the other areas which should be discussed in the event the operator/land owner is considering these types of equipment. Those pertinent rules typically involve **ground-based operations on steep or erosion prone slopes** (Div. 630-150 and 630-0500, see attached guidance document).

Written Plan

A written plan will be required for this unit due to the Div. 623 issues. This memo should be referenced, along with additional discussion about windfirm buffer layout associated with the Substantial risk HLHLs in Area A. A map of the wind buffering scheme should also be included.

Locations of HLHL have been located from Lidar. If operators field verify boundaries of HLHL which vary from the attached map, an updated map showing changes should be submitted with the written plan.

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FPA Guidance for Ground-Based Operations on Steep Slopes:
November 7, 2018

Introduction

The Department is reviewing how the current Forest Practices Act (FPA) applies to tethered operations on steep slopes to determine if resource protection measures should include amended forest practice rules or improved guidance. This document represents guidance based on the current forest practice harvest rules and guidance, as well as some best management practices being implemented by several forest landowners operating on steep slopes. This document also represents input from representatives of the Northwest and Southwest Regional Forest Practices Committees.

The purpose of this guidance is to provide stewardship foresters and landowners/operators a consistent reference for administering the FPA with tethered-assist technology. This document discusses Plans for Alternate Practice (PFAP), Best Management Practices, and administration of the Division 630 rules applicable to tethered logging.

FPA Rules for Ground-Based Operations on Steep Slopes

Within Division 630, rules for ground-based operations on steep slopes and high landslide hazard locations use terms that are equipment-specific and do not reflect new ground-based technology such as tethered logging. This guidance does not address specific equipment terminology. Rather, it focuses on outcomes that align with the purpose statements of the associated rules: maintaining the productivity of forestland (OAR 629-630-0000 (3)), reducing the potential for soil and debris (OAR 629-630-0000 (3)) entering waters of the state (OAR 629-630-0150) and preventing serious ground disturbances (OAR 629-630-0500 (1)).

1. **Steep or Erosion-Prone Slopes**, OAR 629-630-0150.
   a. The rule purpose is to reduce the potential for erosion into waters of the state from:
      i. Slopes over 60%, and
      ii. Slopes over 40% with soils determined by the State Forester as highly-erodible, such as decomposed granitic-type soils and soils after intense wildland fires.
      iii. Rule 0150 also applies to high landslide hazard locations (HLHL), where there is an approved Plan for Alternate Practice (PFAP). Note: This application to HLHL is a change from 2009 guidance.
   b. A PFAP to operate within 100 feet of <u>any</u> stream channel is the only rule modification for rule 0150 that may be approved by the State Forester, if the practices provide "equal or better" resource protection.

2. **High Landslide Hazard Locations**, OAR 629-630-0500. <u>Threshold, at least 30 linear slope feet.</u>
   a. The rule purpose is to prevent serious ground disturbance and drainage alterations on HLHL slopes that may initiate rapidly moving landslides, regardless of public safety exposure.
   b. Where there is public safety exposure below HLHL, apply OAR 629-623-0000 through 0800.
   c. OAR 629-630-0150, also applies if there is an approved PFAP for HLHL.
   d. HLHL slopes are reviewed and/or field confirmed:
      i. Slopes in western Oregon over 80% (or 75% in Tyee core area).
      ii. Headwalls or draws in western Oregon over 70% (or 65% in Tyee core area).
      iii. Atypical conditions anywhere in Oregon where the landslide hazard is equivalent to that on the HLHL slope thresholds identified in 2(d)(i) and (ii), as determined by a

geotechnical specialist. The final determination of equivalent hazard is made by the State Forester.

e. A State Forester-approved PFAP to operate ground-based equipment on HLHL must describe practices to provide "equal or better" resource protection. Identification of HLHL and determination of public safety exposure is a shared responsibility by the operator and ODF. For more information, see Forest Practices Technical Note 2, High Landslide Hazard Locations, Shallow, Rapidly Moving Landslides and Public Safety: Screening and Practices.
f. If there is public safety exposure, such as homes or public roads, located below the operation, the rules in Division 623 may apply, and consultation with the ODF geotechnical specialist is recommended. If an analysis determines downslope public safety risk is "Intermediate" or "Substantial," the State Forester will deny approval of a PFAP for those in-unit slopes.
g. Note: OAR 629-630-0150 for steep or erosion-prone slopes also applies to HLHL slopes.

OAR 629-630-0150 Ground-based Harvesting on Steep or Erosion-Prone Slopes

(1) The purpose of this rule is to reduce the potential for erosion from steep or erosion-prone slopes to enter waters of the state.

(2) Slopes over 60 percent are subject to the requirements of Sections (4) through (9) of this rule.

(3) Slopes over 40 percent where soils consist of decomposed granite-type materials, or other highly erodible materials as determined by the State Forester, are considered erosion-prone and subject to the requirements of Sections (4) through (9) of this rule.

(4) Methods that avoid development of compacted or excavated trails are the preferred alternative for operating on steep or erosion-prone slopes. If the operation will result in excavated or compacted skid trails, operators shall apply sections (5) through (9) of this rule.

(5) If skid trails are located on steep or erosion-prone slopes, operators shall locate them at least 100 feet from any stream channels.

(6) Operators shall locate skid trails where water can drain off the skid trail and onto undisturbed soils.

(7) Skid trails shall not be located straight up and down steep or erosion prone slopes for a distance exceeding 100 feet unless effective drainage and sediment filtration can be achieved.

(8) Operators shall install effective cross ditches on all skid roads located on steep or erosion-prone slopes.

(9) Operators shall limit the amount of ground with disturbed soils on steep or erosion-prone slopes as described in Sections (2) and (3) of this rule to no more than ten percent of the steep or erosion-prone slopes within the operation area.

OAR 629-630-0500 Harvesting On High Landslide Hazard Locations

(1) The purpose of this rule is to prevent timber harvesting-related serious ground disturbance and drainage alterations on all high landslide hazard locations, and to reference additional requirements when there is public safety exposure below the high landslide hazard location.

(2) Operators and the State Forester shall share responsibility to identify high landslide hazard locations and to determine if there is public safety exposure from shallow, rapidly moving landslides using methods described in OAR 629-623-0100 through 0300. If there is public safety exposure, then the practices described in 629-623-0400 through 0800 shall also apply.

(3) Operators shall not construct skid roads on high landslide hazard locations.

(4) Operators shall not operate ground-based equipment on high landslide hazard locations.

(5) Operators shall prevent deep or extensive ground disturbance on high landslide hazard locations during log felling and yarding operations.

(6) Operators concerned about the application of these standards to a specific operation may consult with the State Forester to obtain an evaluation of their harvesting plan and its likelihood of compliance with the standards.

Terminology for Ground-based Operations on Steep Slopes

Calculating 10% disturbance for this rule means calculating the amount of disturbed soils on the total area of steep slopes/erosion prone/HLHL areas within the unit (both cable and ground-based activity areas). Note: Soils, though impacted, that have been stabilized or corrected to protect exposed subsoil and allow sediment-laden waters to infiltrate do not constitute disturbed soils for the purposes of this calculation. Additionally, soils where track berms have been knocked down, slash placed on the impacted soil, and effective drainage and erosion control established do not constitute disturbed soils.

Damage from ground-based operations on steep or erosion-prone slopes/HLHL means an unsatisfactory condition results in: preventable sediment or debris entering waters of the state; disturbance that exceeds 10% on in-unit steep slopes; or adverse ground disturbance, drainage alterations, exposure of subsoil, or deep/extensive ground disturbance that cannot be immediately stabilized or corrected. Adverse ground disturbance includes any areas impacted by ground-based operations in such a way that there is increased risk of soil movement or drainage alteration. This may vary due to location, soil type, or other site specific characteristics.

Disturbed soils mean soils are altered such that water would not likely infiltrate but become channelized or confined, or have the potential to move loosened or exposed soil or debris downslope.

Effective drainage means water bars or other effective methods that direct drainage water off the equipment track and onto "undisturbed soil," while avoiding drainage to HLHL, headwalls, unstable areas, and wet areas. Effective drainage allows sediment in the drainage water to filter or settle out before the drainage water enters waters of the state. Effective drainage features must be located and spaced as needed to reduce the potential for soil and debris to enter waters of the state.

Headwalls are concave slopes that can concentrate water to increase landslide susceptibility. Headwalls are typically located at the heads of channels or swales.

High landslide hazard location (HLHL) means specific sites with characteristics (steepness, shape, and geology) that make it subject to initiation of shallow, rapidly moving landslides. OAR 629-600-0100(34).

Plan for an Alternate Practice means a document prepared by the landowner, operator, or timber owner, submitted to the State Forester for written approval describing practices different than those prescribed in statute or administrative rule. The plan will describe practices to provide "equal or better" resource protection that, if approved by the State Forester, becomes the new enforcement standard. The PFAP has no required review period or standing for public review (unless there is an associated statutory written plan). *The denial of approval of a Plan for an Alternate Practice may be appealed to the Board of Forestry, ORS 527.700(1).*

Unsatisfactory conditions on steep or erosion-prone slopes means soils impacted by ground-based equipment that exhibit any or all of the following:

- Excessive soil surface depressions or compaction. Equipment operates during wet soil conditions or on thin soils, there are excessive equipment passes, or deep ground disturbance from tracks.
    - Which means an ***unsatisfactory condition*** occurs when deep tracks change water accumulation patterns in soils, or when equipment tracks aren't likely to effectively drain.
- Exposed subsoil or excavation. Equipment tracks churn the layers in the soil profile by directional track turning, track spinning, excessive equipment passes, or deep ground disturbance.
    - Which means an ***unsatisfactory condition*** occurs when subsoils, which are lighter in color than surface soils, have been mixed with surface soils.
- Soil puddling. Operating equipment during wet soil conditions when soils are more easily impacted and displaced.

- Which means an ***unsatisfactory condition*** occurs when the surface soil layer becomes a slurry caused by the operation.

Water bar means a constructed "ditch out" at an angle to the equipment track that carries surface water runoff away from the track and prevents water channeling in the track.

ODF Administration of the Rules

1. **Pre-operation Notification Review**:
   a. Notification review for steep or erosion-prone slopes and HLHL, using FERNS, Vantage, or ArcGIS. Verify slopes, public safety exposure, and concerns with a pre-operation inspection.
   b. If an operation has steep or erosion-prone slopes or HLHL, make this **FERNS Formal Comment**.

      "The operation has steep or erosion-prone slopes or high landslide hazard locations. No ground-based machinery activity may occur on slopes which are steep or erosion-prone within 100 feet of any stream or on high landslide hazard locations, without a State Forester approved Plan for Alternate Practice."
   c. Provide the operator or landowner the **PFAP template**.
   d. PFAPs for HLHL areas with "intermediate" or "substantial" downslope public safety risk will not be approved.
   e. Consult the ODF geotechnical specialist if you suspect any downslope public safety exposure, including "low" downslope public safety risk, even if slopes are less than the HLHL slope thresholds. Consult the ODF geotechnical specialist if any structures or public roads are within the Further Review Area (as defined in Forest Practices Technical Note #2). In some cases a PFAP might not be approved when the downslope public safety risk is determined to be "low."

2. **Pre-operation Plan Evaluation**:
   a. Evaluate the PFAP, to determine if the PFAP is complete and will provide "equal or better" resource protection. Clarify concerns during a pre-operation site visit with the operator. Review the "Operational Planning Considerations for Operations on Steep Slopes" and "Best Management Practices" below. This list is not exhaustive and other BMPs may be considered.
   b. Consult ODF's geotechnical specialist, FPA field coordinator, or district staff.
      i. Send the PFAP to the FPA field coordinator for review. Also, send the PFAP to the ODF geotechnical specialist if HLHL are identified in the review or described in the PFAP.
      ii. Discuss local slope failures, findings from the pre-operation inspection, operator and landowner experience, operational method, and the adequacy of the PFAP to identify resource concerns and practices to achieve resource protection. Generally, there is a greater risk for soil disturbance on HLHL if tethered cut and tethered yarded, rather than tethered cut and cable yarded.
   c. Provide feedback on the PFAP to the landowner or operator to improve the plan for approval, *ideally within two weeks*. Document verbal conversations in FERNS.

3. **Pre-Operation Plan Approval Status**:
   a. Approve or deny approval of the PFAP and upload the signed PFAP, based on input from the ODF's geotechnical specialist and FPA field coordinator.
      i. If the PFAP is approved, make a **FERNS Formal Comment**:

         "Fully implementing this Plan for an Alternate Practice will likely achieve the FPA resource protection standards. The operation will be evaluated on the basis of how

well this approved Plan for an Alternate Practice is implemented and how well required resource protection is achieved."

ii. If the PFAP is denied approval, make a **FERNS Formal Comment** and complete a **Certificate of Service** for mail or hand delivery.

"The Plan for an Alternate Practice is denied approval, because it is not likely to achieve FPA resource protection standards."

4. **Active and Post Operation Inspections:**
   a. Inspect PFAP implementation, to verify operator compliance with the PFAP and look for unsatisfactory conditions as described in the Terminology section above. Review any operational concerns with the FPA field coordinator and district staff. Provide appropriate feedback or directions to the operator and landowner to affirm good work or address mitigation practices.

Operational Planning Considerations for Ground-based Operations on Steep Slopes

- Local erosion-prone soils, e.g. decomposed granitics, volcanic soils and other highly-erodible soils as determined by the State Forester
- Active and recent deep-seated landslides
- Slope instability in vicinity or drainage, e.g. slumps, bare slide surfaces, and pistol-butted trees
- Headwalls of streams or deep moist/wet soils parallel to stream channels
- Wet areas (indicated by water or plants such as devil's club, sedges, or skunk cabbage), old slides, and thin-rocky soils
- Non-planar landforms, i.e. slopes broken up by streams or alternating ridges and streams, where blocks or other technology are not planned to operate perpendicular to the contours
- Downslope and drainage features with debris flow potential for public safety risks, e.g. slopes over 60% above houses or public roads. Consult ODF's geotechnical specialist as needed.
- Proposed season of operation.
- Road prism (cut bank, fill, ditch, surface) potentially disturbed by machinery
- Roads with substantial or unstable sidecast material
- PFAP calls for both tethered cutting and tethered yarding on HLHL.

Operational Best Management Practices for Ground-based Operations on Steep Slopes

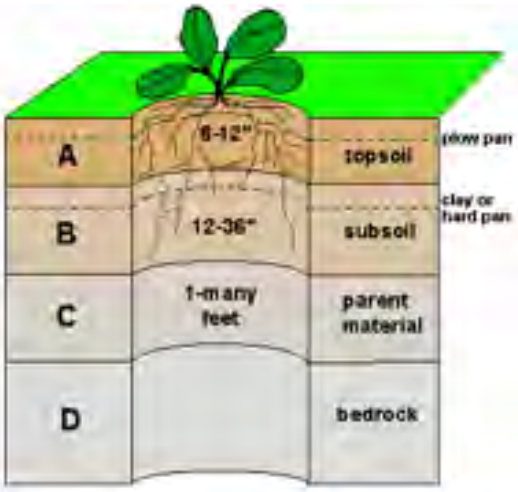
1. **Handling previously-unidentified areas of concerns discovered during the operation**
   - The pre-operational meeting will review areas of concern and plans to modify operations to avoid previously-unidentified areas of concern, such as headwalls, unstable slopes, springs, or small wetlands.
   - Operations will stop disturbance and stabilize unidentified areas that are unstable or wet.

2. **Measures to protect stream channels and waters of the state**
   - Machines will minimize crossing Type N stream channels. Temporary Type N stream crossings will use logs in the channel to protect the bed and bank and not dam up stream flow, then logs will be immediately removed after use.
   - Equipment tracks will be located perpendicular to channels, slashed over, and drained onto undisturbed soils using waterbars or other effective methods, while avoiding drainage to headwalls, unstable soils and wet areas.
   - Track berms will be knocked down to restore the ground surface and slash placed on the soil
   - Water bars or other effective methods will be utilized to prevent gullies, rills, and sediment delivery to streams and wet areas.
   - Machine trails will not be located near culverts, unstable areas or wet areas.

- Maximize track spacing as possible.
- Machinery passes will be limited, as will directional changes and track spin.
- Maintain constant line tension so the tethered machine does not slip or slide.
- Grass seeding and/or mulching will be done to stabilize unstable, heavily-disturbed soils, especially near streams.

3. **Measures to prevent serious ground disturbance and drainage alterations on HLHL**
   - Equipment will operate in favorable soil moisture conditions and cease during unfavorable conditions that result in subsoil exposure, excessive surface tracks, and likely soil puddling.
   - Machinery will not operate in headwalls.
   - Machinery passes will be limited, as will directional changes and track spin.

4. **Determining when soil disturbance conditions would modify the operation**
   - Operator will stop operations when soil moisture and soil disturbance become unfavorable, to prevent exposure of the subsoil, likely soil puddling, excessive surface soil depressions, or excessive track depressions that are difficult to drain. Activities shall cease if soil condition turns into a mud-like consistency causing it to be forced out from under machine tracks or wheels, sometimes referred to as "pumping." The pumping action is not normal track depressions expected in the forest environment under the load of the machinery.



Excessive tethered equipment track depressions that are difficult to effectively drain, 10 to 24 inches deep for over 100 feet.

If a feller-buncher with 28-foot reach maximized its reach and traveled down/up the same track, a 24-inch track will cover 7% and a 36-inch track will cover 10% of every operational acre.

Notes:

- Not every track is considered disturbance. See disturbance definitions above.
- For the same equipment weight, a machine running 24-inch tracks will result in more ground disturbance than the same machine with 36-inch tracks.

Exhibit A6
Page 1 of 1

WRITTEN PLANS
629-605-0170
Statutory Written Plans

(1) Definition of "Directly Affect" and "Physical Components" For the purpose of section (4) of this rule:
(a) "Physical components" means materials such as, but not limited to, vegetation, snags, rocks and soil; and
(b) "Directly affect" means that physical components will be moved, disturbed, or otherwise altered by the operation.

(2) Statutory Written Plans for Operations near Type F, Type SSBT and Type D Streams. An operator must submit to the State Forester a written plan as required by ORS 527.670(3) before conducting an operation that requires notification under OAR 629-605-0140, and that is within 100 feet of a Type F, Type SSBT or Type D stream.

(3) Statutory Written Plans for Operations near Wetlands larger than Eight Acres, Bogs or Important Springs in Eastern Oregon. An operator must submit to the State Forester a written plan as required by ORS 527.670(3) before conducting an operation that requires notification under OAR 629-605-0140, and that is within 100 feet of a significant wetland that is a wetland larger than eight acres (not an estuary), a bog, or an important spring in Eastern Oregon as identified in 629-645-0000 (Riparian Management Areas and Protection Measures for Significant Wetlands).

(4) Waiver of Statutory Written Plans. The State Forester may waive, in writing, the requirement for a written plan described in sections (2) and (3) if the operation activity will not directly affect the physical components of the riparian management area. Further direction of when a waiver will be granted is described in Technical Note FP10 dated July 1, 2017.

(5) Statutory Written Plans for Operations near Wildlife Sites and Estuaries. An operator must submit to the State Forester a written plan as required by ORS 527.670(3) before conducting an operation that requires notification under OAR 629-605-0140, and that is within 300 feet of any:
(a) Specific site involving threatened or endangered wildlife species, or sensitive bird nesting, roosting, or watering sites; as listed by approximate legal description, in a document published by the Department of Forestry titled "Cooperative Agreement Between the Board of Forestry and the Fish and Wildlife Commission, March 28, 1984."
(b) Resource site identified in OAR 629-665-0100 (Species Using Sensitive Bird Nesting, Roosting and Watering Sites), 629-665-0200 (Resource Sites Used By Threatened and Endangered Species).
(c) Significant wetland that is classified as an estuary identified in OAR 629-645-0000 (Riparian Management Areas and Protection Measures for Significant Wetlands).
(d) Nesting or roosting site of threatened or endangered species listed by the U.S. Fish and Wildlife Service or by the Oregon Fish and Wildlife Commission by administrative rule.

APPLICATION:

Sections (2) through (5) are used for enforcement.

COMPLIANCE:

An operator is in compliance with this rule when a statutory written plan is submitted prior to forest operations within the distances described in this rule.

Unsatisfactory Condition: An unsatisfactory condition exists when an operator does not submit a statutory written plan prior to operations within the distances described in this rule.

Submitting these statutory written plans is not something the SF can waive. There is no alternative in the statute.

Damage: Resource damage is not a prerequisite for taking enforcement action. An unsatisfactory condition is a violation.

Written Statement of Unsatisfactory Condition: Under specific conditions listed in OAR 629-670-0125, a written statement of unsatisfactory condition may be issued instead of a citation for certain administrative violations. Because the statute requires these written plans, a written statement will rarely be appropriate. One such situation is described here.

The FERNS E-Notification summary page and PDF printout document provide legal notice that a written plan is required based on the presence of protected resources. The SF should make a Formal Comment that a written plan is required for the identified FPA resources. The operator is required by OAR 629-665-0020(4) to stop operations and inform the State Forester when a resource site is discovered. A resource site is defined as T&E bird species; sensitive bird nesting, roosting and water sites; and significant wetlands, OAR 629-600-0100(60); see also OAR 629-665-0000(2). There is shared responsibility between ODF and operators to recognize, identify, and plan to protect specified resource sites.

If the operator has been properly notified of the requirement for a statutory written plan, an unsatisfactory condition may be regarded as a violation. If the operator has **not** been properly notified of the requirement for a written plan, a written statement should be given directing that the operation cease within the area to be addressed by the plan until a written plan is submitted. If the **operator's failure to complete the notification properly** prevents ODF from requesting a written plan for a protected resource affected by the operation, enforcement action may be taken under OAR 629-605-0170 (written plans) and/or under ORS 527.670(6) (failure to notify).

If the operator has failed to submit a statutory written plan (after being informed of the requirement) and a specific forest practice is not in compliance, multiple violations exist.

Example: A statutory written plan is not submitted for activities with 100 feet of a Type F stream and an operator constructs a landing in the RMA. If construction of the landing also resulted in damage to the Type F stream because the landing was poorly drained, a violation of the rule requiring proper drainage of landings would exist, as well as a procedural violation of the requirement to submit a written plan. There are two violations.

Example: In rare cases, if the operator was informed of the Type F stream, but had **not** been informed of the requirement for a statutory written plan and built a landing in the RMA, they would be cited for the landing in the RMA, but not failure to submit a written plan. It is a reasonable expectation that operators who are informed of the classification of a water of the state on the notification, even if a written plan was not requested, should know to apply the required protection measures for the specified waters. In cases where an operator may not have been informed on the notification of the classification of a water, it may still be reasonable to expect the operator to apply protection measures. However, such situations should be thoroughly investigated, discussed throughout the district management hierarchy, and referred to Salem staff if necessary.

ADMINISTRATION:

Effective August 29, 2003, the passage of HB 3264 removed the authority of the State Forester to require prior approval and to approve written plans. This legislation also changed the procedures for review and comment periods on written plans. Rule revisions to implement the change brought about by this legislation became effective August 1, 2005.

As of 2020, species covered under OAR 629-605-0170(5)(a) include the band-tailed pigeon (only specific mineral springs listed in the 1984 ODF/ODFW Agreement) and golden eagle (only certain nest trees listed in the **confidential** 1984 ODF/ODFW agreement) and species covered under OAR 629-605-0170(5)(d) include the marbled murrelet (state- and federal-listed threatened species); Additional species may warrant written plans in the future if additional forest-associated species are added to the state or federal endangered species lists.
Also some Resource Inventory Date Base Summaries are **confidential documents.**

Written Plans
The purpose of written plans is to encourage communication between the SF and the operator. In requiring a written plan, the SF is informing the operator that a proposed practice has potential to put a resource at risk. The operator is expected to submit a plan that includes a description of protection measures implemented during and after the operation that are designed to protect the resource. The SF will review the plan and provide comments, when appropriate, regarding the likelihood of the practice described in the plan of complying with the applicable FPA standards. Further discussion may take place in response to the review and comment.

Note: The SF is not required to have an engineering license to review a written plan or PFAP for FPA compliance when the plan is written by a person with an engineering license.

Example: An operator plans to replace an existing bridge that is too weak to support heavy equipment, which will involve using an existing low-water crossing on a Type F stream to get his equipment across the stream and back again. A statutory written plan is required per OAR 629-605-0170(2), 629-625-0100(2) and 629-625-0320(1) and (2). The plan must address:

- Timing of the crossing (seek ODFW's input if outside the in-stream work guidelines),
- Adequacy of the streambed to support the equipment crossing,
- Necessity of importing rock fill material or temporary placement of a log crib,
- Prevention of sedimentation from the approaches to the crossing and
- Prevention of petroleum contamination into the stream during crossings.

See additional discussion on fords and fish passage in Forest Practices Technical Note 4.

Waiver of Statutory Written Plan

Forest Practices Technical Note No. 10, "Waiver of Statutory Written Plan, dated July 1, 2017 provides written documentation of an **automatic waiver** of the statutory written plan requirement for operational activity within 100 feet of streams, wetlands, bogs and springs that require a statutory written plan, provided the activity **does not directly affect the physical components of the RMA**.

To determine written plan requirements and waivers take two measurements:

- Strict 100-foot slope distance (horizontal if cliff like features) from Type F, Type SSBT or Type D streams, significant wetlands that are not estuaries, bogs, or important springs in Eastern Oregon and
- Strict slope distance (horizontal if cliff like features) of the RMA width for Type F, Type SSBT or Type D streams, significant wetlands that are not estuaries, bogs, important springs in eastern Oregon.

Only RMA widths for vegetation retention requirements can be measured as an average width, OAR 629-635-0300(3)(b).

Preparing Written Plans

Operators or landowners, not the SF, are responsible for preparing the plan. At the same time, it is reasonable for an operator to ask and expect the SF to respond to what specific concerns will need to be addressed in the plan. To facilitate the preparation of a written plan, the SF should provide the operator a copy of the most current guidance to operators on preparing written plans. The *Oregon Forest Protection Laws, an Illustrated Manual* is another source for information on written plans and the FPA and rule requirements.

Written Plan Content

All written plans, regardless of whether required by statute or rule, must describe how the operation is planned to be conducted in sufficient detail to allow the State Forester to evaluate and comment on the likelihood that the operation will comply with the applicable standards in the FPA or administrative rules. Only documents that contain the information listed in OAR 629-605-0170(13) will be considered written plans. Written plans must contain:

(1) A map showing protected resource(s) and the operation area;
(2) The specific resource(s) that require protection;
(3) The practices that may affect the protected resource(s);
(4) The specific techniques and methods employed for resource protection;
(5) Additional written plan content required in individual rules.

Submitting Written Plans

Once a document is submitted and received by the department, the applicable comment period starts. Only written plans that contain the information listed in OAR 629-605-0170(13) will be considered complete written plans. If a plan is submitted and does not contain the required information, it will be returned to the person who submitted the plan and it will not be considered **"received."** When written plans are submitted that demonstrate a good faith effort but still need some "fine tuning", the SF may consider the plan complete and provide comments during the 7-day department comment period to explain what "fine tuning" is necessary.

Note: The comment period may start until a written plan is submitted and "received" by ODF.

Statutory Written Plan Comment and Review Periods

ORS 527.670(10) provides a comment period to allow the SF and any interested parties to review statutory written plans. Interested parties must submit comments to the department within the 14-day written plan general comment period for the comments to be considered by the SF. The SF may not provide official comments to the operator until the 14-day written plan general comment period has expired. However, informal communication related to the written plan is allowed at any time. At the conclusion of the 14-day written plan general comment period, the SF has a 7-day period in which to provide official comments to the operator. The SFs must post a FERNS Formal Comment when providing official comments to the operator.

Statutory Written Plan Comment Periods, Guidance 629-605-0170

May 1	May 2 through May 14	May 15 through May 21	May 22
Written Plan "Received," complete and uploaded to FERNS	• 14-day public comment period • ODF may have informal conversations with the operator about the plan	• ODF sends the notifying parties public comments made within the 14-day comment period • Operation may begin when ODF makes a Formal Comment, provided the 15-day waiting period has expired or been waived	Operation may begin if ODF made no formal comments

Note: Standardized Formal Comment text may be found on the Private Forests SharePoint site.

Provided a notification of operations has been submitted and the 15-day waiting period as required by OAR 629-605-0150(1) has expired or been waived, the operator may start operations described in the plan upon receipt of the official comments from the SF. If the SF does not provide official comments during the prescribed 7-day period, the operations may begin on the 22nd day after the plan was submitted and received.

ORS 527.670(10)(a) requires the SF to review every statutory written plan. Department policy is that SFs should place a high priority on providing official comments to the operator during the 7-day comment period.

Purpose of Written Plan Comments by ODF

Comments provided by the department or the board under ORS 527.700(6) are for the sole purpose of providing advice to the landowner, timber owner, and the operator about whether the practice described in the plan will comply with the statutes and rules of the FPA. Comments provided by the department or the board do not constitute an approval of the written plan or operation. If comments are not provided by the department or the board on the written plan, the failure to provide comments does not constitute a rejection of the written plan or operation. In the event that the department or the board determines that enforcement action is appropriate, the department or the board may consider, but are not bound by, comments that were provided on the plan.

Comments from Interested Subscribers or Others

If comment from interested parties is received during the 14-day written plan general comment period, the SF must provide the comments to the landowner, timber owner and the operator. The SF must also give the interested parties the official ODF comments that were sent to the landowner, timber owner, and the operator, along with copies of the revised written plans, if any.

Public Records

Written plans filed with the department are public records. Consistent with Directive 0-5-1-301, "Department Public Records," and OAR 629-674-0100, every person has the right to inspect written plans. Public subscribers who do not submit comments or other members of the public may request copies of written plans. Requests for copies of written plans shall be filled at the cost of the labor and materials to complete the request, OAR 629-010-0200.

Appeals and Hearings

ORS 527.700 and OAR 629-672-0100 to -0310 describe the procedures for any affected or aggrieved person appealing comments made by the State Forester with regard to statutory written plans.

If the SF receives a request for hearing, alert Salem staff immediately.

The appeals and hearings procedures have very strict time requirements. Please try to ensure contact with an actual person, as opposed to electronic or voice mail, to prevent critical time loss. Refer to OAR 629-605-0170(3).

ORS 527.700 allows persons who have commented on a statutory written plan and who believe they are adversely affected or aggrieved by the actions in the plan to request a hearing within 14 days after either the State Forester issues comments or the 21 days for comments has lapsed (ORS 527.670(9)). Unless a waiver is granted by all parties, the hearing on a valid request must be held with 21 days, with final comments issued by the Board in 45 days of receiving the request. The SF and other district personnel may be called to testify at the hearing. Valid requests for appeal of written plans are rare. Refer to OAR 629-672-0210.

Persons entitled to a hearing under OAR 629-672-0210 may also apply for a Stay of Operations (OAR 629-672-0300), but unless the request is accompanied by a bond of at least $15,000, a stay will not be considered. Always consult Salem staff immediately if a request for stay is received to determine if the request is valid. Salem staff will take appropriate action on the request.

Typically, ODF would consider a written plan to be active while the notification associated with the plan is in its first year, or its second or third continued year. With FERNS in operation, operators are not allowed to submit a written plan not associated with a notification.

WRITTEN PLANS
629-605-0170
Statutory Written Plans

(6) Statutory Written Plans and Stewardship Agreements. The written plan requirements in section (2), (3) and (5) of this rule do not apply to operations that will be conducted pursuant to a stewardship agreement entered into under ORS 541.423.

(7) Statutory Written Plan Requirements and Notification of Protected Resource Sites. The State Forester shall notify the operator of the presence of any site listed in section (2), (3) or (5) of this rule at any time the State Forester determines the presence of those sites.

(8) The State Forester shall notify the operator that a written plan is required if:
(a) The operation will be within 100 feet of any sites listed in sections (2) or (3) of this rule and the operation will directly affect the physical components of a riparian management area associated with any of those sites; or
(b) The operation will be within 300 feet of any site listed in section (5) of this rule.

APPLICATION:

This section is not used for enforcement.

If the operator fails to notify the State Forester prior to conducting an operation, the State Forester is relieved of the responsibility to notify the operator of the requirement to submit a statutory written plan. In this case, failure to submit a statutory written plan should be cited under section (2), (3), or (5) of this rule.

ADMINISTRATION:

There are two administrative requirements of this section of rule. The first is the requirement to notify an operator of the presence of a site listed in section (2), (3), or (5), and the second is the requirement to inform the operator of the responsibility to prepare and submit a statutory written plan.

While this rule requires the State Forester to inform only operators of the presence of a site and the requirement to submit a statutory written plan, OAR 629-605-0180(1)(a) requires the State Forester to notify both the operator and landowner of the presence of a site listed in subsections (5)(a) or (d) requiring a written plan. Thus, as described below, **both** operators and landowners should be notified of the presence of these sites and their written plan requirements.

To ensure proper notification of the presence of a site, it is important that ODF maintains an up-to-date inventory of sites. Field offices play an important role to communicate with local ODFW Wildlife Biologist and to notify the ODF Wildlife Biologist of any new sites so that the inventory can be updated. Operators are not obligated under any of the rules to inventory sites.

For sites listed in subsection (2) (Type F, Type SSBT, or Type D streams), determination of the classification of waters is an ongoing action. Landowners can assist with the classification of waters and it is not unreasonable to expect operators and landowners to share information about waters with the SF as part of the operation planning process. See also stream classification in OAR 629-635-0200(11).

For all sites, if the operator or another party informs the SF of the presence of a new site, or the SF identifies a site through a pre-operation inspection, the SF can then immediately use that information to require a statutory written plan.

With the exception of species with specific protection rules under Division 665, until the operator is informed of the site and the written plan is requested, the operator does not have an obligation to prepare and submit a written plan. For species protected under Division 665, operators have an obligation to protect sites and submit a statutory written plan if a new site is discovered during an active operation, even if ODF did not notify the operator of the site. See guidance for OAR 629-665-0020(4).

Example, exception: If an SF discovers through a pre-operation inspection a band-tailed pigeon watering site or a golden eagle nest site not listed in the 1984 ODF/ODFW Agreement, the SF cannot require FPA protection, but the SF should encourage voluntary protection. Only specific sites listed in the **confidential** 1984 ODF/ODFW Agreement are protected under the FPA rules. The written plan is a key communication tool for resource protection. Use the Formal Comments to indicate the written plan requirement.

Example, Formal Comment: "This operation involves activities that may affect resources within 100 feet of Leopold Creek, which is a medium Type D stream. You must submit a written plan to the State Forester before operating within 100 feet of the stream. Once the plan is submitted, there is a mandatory 14- to 21-day comment period before the operation may begin. The written plan must contain...".

The SF should notify each of these parties by making a statement in notification Formal Comments andsend an inspection to non-registered E-notification parties. A phone call to the operator or landowner also ensures awareness of the requirements:

1. Indicates that a notification has been submitted for an operation that requires a written plan;
2. Describes the statutory comment period following the filing of the plan, if applicable;
3. States that the operation cannot start within the area addressed by the written plan requirement until ODF comments are made or the comment period is complete. ODF comments, if any, will be provided within 7 calendar days following the 14-day written plan general comment period, ORS 527.670(11);
4. States that copies of the final written plan will be mailed to any person providing timely comments and to the operator, timber owner, and landowner, ORS 527.670(12); and
5. Reminds the landowner and operator of record to inform all sub-contractors of the written plan requirement because many operations may have several "operators" working or directing work on the site.

Example: An inspection report might read: "A written plan is required to address the protection measures needed along Leopold Creek, a medium Type D stream. The written plan is subject to a 14-day written plan comment period. The operation addressed in the plan may not begin until comments are provided by the SF or the additional 7-day comment period has ended (21 days total). The plan must adequately address the protection requirements for a Type D stream. Any sub-contractors must be notified of the provisions in the written plan."

If an operator is **not informed** of the presence of a site listed in section (1), and the operator fails to submit a written plan or protect the site according to rules, the ability to enforce the protection rules may be substantially weakened. In this case the operator **cannot** be held responsible for not submitting a written plan. However, depending upon circumstances, the operator may still be responsible for protection of the site under the specific rules that require site protection. A thorough investigation should be done and district supervisors should be consulted in these situations. Salem staff may be consulted as necessary.

If the State Forester does not notify the operator and landowner of the presence of the sites listed **only** under subsections (1)(b) or (d) of this rule, the department may not be able to hold the operator responsible to protect the site. This is because there are no specific rules that would apply protection.

However, if an operator discovers a resource site described in OAR 629-605-0170(5)(b),(c), (bald eagle, spotted owl, great blue heron, osprey, significant wetlands, etc.), the operation must be stopped and the site protected under OAR 629-665-0020(4), even if the operator was not informed of the site by the department. It is reasonable to expect that operators should be able to visually identify osprey, eagle and heron nest sites and significant wetlands that are obviously wetlands and greater than 8 acres in size.

WRITTEN PLANS
629-605-0170
Statutory Written Plans

(9) Written plans required under section (1) of this rule shall be subject to the hearings provisions of ORS 527.700(3) (Appeals from orders of State Forester hearings procedure; stay of operation); and shall be subject to the provisions of ORS 527.670(10), (11) and (12) (Commencement of operations; when notice and written plan required; appeal of plan) prescribing certain waiting periods and procedures.

APPLICATION:

This section is not used for enforcement.

ADMINISTRATION:

This section does not impose additional regulation on operators but it makes clear how the provisions of ORS 527.670 and ORS 527.700 apply to certain written plans.

Statutory Written plans submitted under (2) and (5)(a) through (d) are subject to the appeals and hearings procedures listed in ORS 527.700. ORS 527.700 outlines the appeals and hearings procedures referred to in this rule, and OAR 629-672-0100 through 0310 more specifically define this process. It is important that SFs be familiar with these procedures and understand that only written plans submitted under subsection (2) and (5)(a) through (d) are subject to appeals from the public.

If you receive a request for a hearing, alert Salem staff immediately. Please try to ensure contact with an actual person, as opposed to electronic or voice mail, to prevent critical time loss. There are very strict time frames and administrative requirements associated with the hearings referred to in this rule.

ORS 527.700 allows persons who have commented on a statutory written plan and who believe they are adversely affected or aggrieved by the actions in the plan to request a hearing within 14 days after either the State Forester issues comments or the 21 days for comments has lapsed (ORS 527.670(9)). Unless a waiver is granted by all parties, the hearing on a valid request must be held with 21 days, with final comments issued by the Board in 45 days of receiving the request. The SF and other district personnel may be called to testify at the hearing. Valid requests for appeal of written plans are rare. Refer to OAR 629-672-0210.

Persons entitled to a hearing under OAR 629-672-0210 may also apply for a Stay of Operations (OAR 629-672-0300), but unless the request is accompanied by a bond of at least $15,000, a stay will not be considered. Always consult Salem staff immediately if a request for stay is received to determine if the request is valid. Salem staff will take appropriate action on the request.

Other requirements identified in this section refer to statutory responsibilities of the State Forester in the written plan process:

1. ORS 527.670(10) requires (a) the State Forester to review written plans submitted under (1)(a) - (d) of this rule and after review, may provide comments to the person who submitted the written plan; and (b) the State Forester's comments may be made no earlier than 14 calendar days after the plan was received and no later than 21 calendar days after the plan was received; and (c) provided a notification of operation was received, the operation may commence on the date the State Forester provides comments or, if no comments are provided, at any time after 21 calendar days after the written plan was received.
2. ORS 527.670(11) states: (a) that comments provided by the State Forester or the board are for the sole purpose of providing advice to the operator regarding whether the operation described in the plan is likely to comply with the FPA. Comments provided by the State Forester or the board do not constitute approval of the plan or the operation; and (b) that if the board or the State Forester does not comment on a written plan, the failure to do so does not mean that the operation, if carried out in conformance with the written plan complies with the FPA nor does failure to comment on the written plan constitute a rejection of the written plan or operation; and (c) that, in the event enforcement action is necessary, the State Forester or the board shall consider, but are not bound by, comments provided by the State Forester or the board..
3. ORS 527.670(12) – Lists the responsibilities of the State Forester when timely comments are filed on written plans. First the State Forester must send a copy of the review and comments, if any to persons who submitted comments within the 14-day written plan general comment period. Second, the State Forester must send to the operator, timber owner and landowner, a copy of the written plan, the State Foresters review and comments, if any, along with any public comments. Timely comments are defined in ORS 527.670(9).

There should be no administrative fees or copying fees required to meet the above obligations. If other interested parties request copies, copying fees consistent with the public records directive and public record rule are appropriate.

Note: The SF is not required to have an engineering license to review a written plan or PFAP for FPA compliance when the plan is written by a person with an engineering license.

WRITTEN PLANS
629-605-0170
Non-Statutory Written Plans

(10) Non-Statutory Written Plans. An operator must submit a written plan as required by ORS 527.670(2) and the rules listed below unless the State Forester waives the written plan requirement. Written plans required by the rules listed below are not subject to the provisions of 527.700(3) or 527.670(10), (11) and (12).

- *(a) 629-605-0190(1) - Operating near or within sites that are listed in the "Cooperative Agreement Between the Board of Forestry and the Fish and Wildlife Commission, March 28, 1984" or sites designated by the State Forester;*
- *(b) 629-605-0190(2) - Operating near or within habitat sites of any wildlife or aquatic species classified by the Department of Fish and Wildlife as threatened or endangered;*
- *(c) 629-623-0700(1) - Conducting timber harvesting or road construction operations with intermediate or substantial downslope public safety risk;*
- *(d) 629-623-0700(2) - Constructing a stream crossing fill over a debris torrent-prone stream with intermediate or substantial downslope public safety risk;*
- *(e) 629-623-0700(3) - Locating a waste-fill area within a drainage containing debris torrent-prone streams with intermediate or substantial downslope public safety risk;*
- *(f) 629-625-0100(2)(a) - Constructing a road where there is an apparent risk of road-generated materials entering waters of the state from direct placement, rolling, falling, blasting, landslide or debris flow;*
- *(g) 629-625-0100(2)(c) - Constructing a road within the riparian management area of a medium or large Type N stream;*
- *(h) 629-625-0100(3) - Constructing a road on high landslide hazard locations;*
- *(i) 629-625-0100(4) - Placing woody debris or boulders in the stream channel of a Type N stream for stream enhancement;*
- *(j) 629-625-0320(1)(b)(B) – Constructing a permanent stream crossing fill over 15 feet deep in a Type N stream;*
- *(k) 629-630-0200(3) - Locating a landing within the riparian management area of a medium or large Type N stream;*
- *(l) 629-630-0700(3) - Yarding across streams classified as medium or large Type N;*
- *(m) 629-630-0800(4)(c) - Constructing a temporary stream crossing fill over 8 feet deep in a Type N stream;*
- *(n) 629-650-0005 - Operating within 100 feet of a large lake;*
- *(o) 629-660-0050(1) - Removing beaver dams or other natural obstructions located farther than 25 feet from a culvert in a Type N stream;*
- *(p) 629-665-0020(2) - Operating near a resource site requiring special protection; and*
- *(q) 629-665-0210(1) - Operating near a Northern Spotted Owl resource site.*

APPLICATION:

This rule section is not used for enforcement. Enforcement action should be taken under the specific rule requiring a non-statutory written plan.

Unless the SF grants the waiver, a non-statutory written plan is required and must be submitted before the practice or operation begins. The requirement for a non-statutory written plan referred to in this rule may be waived if the SF determines that the formal plan process is not needed to help ensure resource protection. Consideration of the waiver begins when the operator requests the waiver.

ADMINISTRATION:

Non-statutory Written Plans

Non-statutory written plans are required by rule. Unlike statutory written plans that are required by law and mandatory, non-statutory plans may be waived, do not have a required comment period for interested parties (although written plans are public information), and are not subject to hearings and appeals. Non-statutory written plans require a 14 calendar day department comment period. Any or all of this comment period may be waived by the SF.

Requiring a Non-statutory Written Plan

Non-statutory written plans are required for practices described in this rule unless this requirement is waived by the SF. It is the operator's responsibility to either submit a plan or request a waiver of the plan requirement. Unlike statutory plans, there is no requirement for the SF to advise the operator of a non-statutory plan requirement. While it is reasonable to expect the operator to know what practices or operations require written plans, the SF should inform the operator of the written plan requirement whenever possible.

Waiving the Non-statutory Written Plan Requirement

Factors the SF may apply when considering waiving this requirement include site specific characteristics of the operation area and the knowledge, skills, and abilities of the operator. Any waiver of the requirement for a written plan must be indicated in FERNS Formal Comments.

"FERNS" (Forest Activity Electronic Reporting and Notification System), aka E-Notification.

Written Plans

The purpose of written plans is to encourage communication between the SF and the operator. In requiring a written plan, the rule is informing the operator that a practice has potential to put a resource at risk. The operator is expected to submit a plan that includes a description of protection measures implemented during and after the operation that are designed to protect the resource. The SF will review the plan and provide comments, when appropriate, regarding the likelihood of the practice, if conducted as described in the plan, complying with the applicable FPA standards. Further discussion may take place in response to the review and comment.

Note: The SF is not required to have an engineering license to review a written plan or PFAP for FPA compliance when the plan is written by a person with an engineering license.

Preparing Written Plans

Operators or landowners, not the SF, are responsible for preparing plans. At the same time, it is reasonable for an operator to ask and expect the SF to identify specific concerns that need to be addressed in the plan. To facilitate the preparation of a written plan, the SF should provide the operator any available program information on written plan development.

Written Plan Content

All written plans, regardless of whether required by statute or rule, must contain certain information. The operator is required to describe the operational activities in sufficient detail to allow the State Forester to evaluate and comment on the likelihood that the operation will comply with the applicable standards. Only documents that contain the information listed in OAR 629-605-0170(13) will be considered complete written plans. Written plans must contain:

(1) A map showing protected resource(s) and the harvest area
(2) The specific resource(s) that require protection
(3) The practices that may affect the protected resource(s)
(4) The specific techniques and methods employed for resource protection
(5) Additional written plan content required in individual rules

Refer to the guidance in OAR 629-605-0170(13) for more information on written plan content.

Submitting Non-statutory Written Plans

Only documents that contain the required information will be considered complete written plans. If a written plan does not contain the required information, it will be returned to the person who submitted the plan and it will not be considered "received." The applicable comment period starts once a complete written plan is received by the department.

When written plans are submitted that demonstrate a good faith effort but still need some "fine tuning," the SF may consider the plan complete and provide comments during the 14-day written plan general comment period to explain what "fine tuning" is necessary.

Non-statutory Written Plan Review and Comment Period

HB 3264 removed the authority of the State Forester to approve written plans. To ensure the SF an opportunity to review and comment on written plans, effective August 1, 2005, rule revisions in OAR 629-605-0170(11)(b) instituted a 14-day written plan general comment period to provide an opportunity for the SF to review and comment on non-statutory written plans. The 14-day written plan general comment period may not start until a written plan is submitted and received by the department. Any or all of this comment period may be waived by the SF for a non-statutory written plan. The SF should waive the remainder of the comment period after appropriate communication has taken place with the operator.

Department policy is that SFs strive to comment on every written plan, but priorities may have to be set because of workloads.

Note: the 15-day waiting period for the notification also must be taken into consideration before operations may begin. The 14-day mandatory statutory written plan general comment period, the 14-day non-statutory written plan general comment period, and the 15-day waiting period may overlap to varying degrees.

Completion of the Non-statutory Written Plan General Comment Period
Providing notice has been given and the 15-day waiting period required by OAR 629-605-0150(1) has been waived or has concluded, the operator may commence operations described in the plan upon receipt of the SF comments. If no comments are provided by the SF, the operation may commence following the passage of the 14 days after the plan was submitted. When commenting on the plan, the SF is expected to post comments in the FERNS Formal Comment, using the appropriate or similar text in the FERNS Formal Comment template on the Private Forests SharePoint site.

Non-statutory Written Plan Comment Periods, Guidance 629-605-0170

May 1	May 1 through May 14	May 15
Written Plan "Received," complete and uploaded to FERNS	• Operation may begin after ODF makes a Formal Comment, provided the 15-day waiting period has lapsed or been waived • There is no public comment period	Operation may begin if ODF made no formal comments, provided the 15-day waiting period has lapsed or been waived

Purpose of Written Plan Comments
Comments provided by the department or the board under ORS 527.700(6) are for the sole purpose of providing advice to the landowner, timber owner, and the operator of whether the proposed practices will comply with the FPA and rules. Comments provided by the department or the board do not constitute an approval of the written plan or operation. If comments are not provided by the department or the board on the written plan, the failure to provide comments does not constitute a rejection of the written plan or operation. In the event that the department or the board determines that enforcement action is appropriate, the department or the board may consider but are not bound by comments that were provided on the plan, ORS 527.670(11)(c).

Public Records
Written plans filed with the department are public records. Consistent with Directive 0-5-1-301 "Department Public Records," and OAR 629-674-0100 Procedures for Requesting Copies of Notifications and Written Plans; Fees, every person has the right to inspect written plans. Public subscribers who do not submit comments or other public may request copies of written plans. Requests for copies of written plans shall be filled at the cost of the labor and materials to complete the request (see OAR 629-010-0200).

Compliance
If an operator fails to submit a non-statutory written plan prior to beginning the operation or practice that requires one, and has not requested or received a waiver, a violation of the individual rule requiring a plan exists. If an operator fails to submit a non-statutory written plan and a specific forest practice is not in compliance, multiple violations may exist. Example: A non-statutory written plan is not submitted for road construction in the riparian management area of a large or medium Type N stream and an operator constructs a road in the RMA. If construction of the road results in damage to the Type N stream because the road was poorly drained, a violation of the rule requiring proper drainage of roads would exist, as well as a violation for failure to submit a non-statutory written plan. Multiple citations may be issued.

WRITTEN PLANS
629-605-0170
Non-statutory Written Plans

(11) If an operator, timber owner or landowner is required to submit a written plan of operations to the State Forester under subsection (10) of this section:

(a) The State Forester shall review the written plan and may provide comments to the person who submitted the written plan;

(b) Provided that notice has been given as required by 527.670 (6), the operation may commence on the date the State Forester provides comments. If no comments are provided the operation may commence at any time after 14 calendar days following the date the written plan was received;

(c) Comments provided by the State Forester under paragraph (a) of this subsection, to the person who submitted the written plan are for the sole purpose of providing advice to the operator, timber owner or landowner regarding whether the operation described in the written plan is likely to comply with ORS 527.610 to 527.770 and rules adopted thereunder. Comments provided by the State Forester do not constitute an approval of the written plan or operation;

(d) If the State Forester does not comment on a written plan, the failure to comment does not mean an operation carried out in conformance with the written plan complies with ORS 527.610 to 527.770 or rules adopted thereunder nor does the failure to comment constitute a rejection of the written plan or operation;

(e) In the event that the State Forester determines that an enforcement action may be appropriate concerning the compliance of a particular operation with ORS 527.610 to 527.770 or rules adopted thereunder, the State Forester shall consider, but is not bound by, comments that the State Forester provided under this section.

APPLICATION:

Subsection 11(b) of this rule is used for enforcement. Existence of damage is not a prerequisite for taking enforcement action.

COMPLIANCE:

An operator is in compliance with subsection 11(b) of this rule when, prior to commencing an operation or a practice requiring a non-statutory written plan under subsection (10) of this section, the operator:

(a) receives comments from the SF; or
(b) complies with the 14-day written plan general comment period addressed in subsection (11)(b) of this rule.

Unsatisfactory Condition: An unsatisfactory condition exists when the operator submits a written plan and does not comply with the 14-day written plan general comment period addressed in subsection 11(b) of this rule.

Damage: Existence of damage is not a prerequisite for taking enforcement action. Under this rule, an unsatisfactory condition is a violation. The operator, by not waiting the 14 days, denies the SF the opportunity to review and comment on the written plan.

Written Statement of Unsatisfactory Condition: Under specific conditions listed in OAR 629-670-0125, a written statement of unsatisfactory condition may be issued instead of a citation.

ADMINISTRATION:

Non-statutory written plans are required for those practices listed in subsection (10) of this rule. This requirement may be waived by the SF. See Guidance under OAR 629-605-0170(10)

Note: The SF is not required to have an engineering license to review a written plan or PFAP for FPA compliance when the plan is written by a person with an engineering license.

WRITTEN PLANS
629-605-0170
Written Plan Content For All Written Plans

(12) Written plans required under OAR 629-605-0170 must contain a description of how the operation is planned to be conducted in sufficient detail to allow the State Forester to evaluate and comment on the likelihood that the operation will comply with the Forest Practices Act or administrative rules.

APPLICATION:

This rule is not used for enforcement.

ADMINISTRATION:

This rule provides a general description of the desired content of all written plans whether they are required by rule or statute. It requires written plans to contain enough information regarding the operation to allow an accurate assessment of the likelihood of compliance with the applicable resource protection standards. If a written plan is submitted and does not contain sufficient information for this assessment, it will be returned to the person who submitted the plan and will not be considered "received."

WRITTEN PLANS
629-605-0170
Written Plan Content For All Written Plans

(13) Written plans required under OAR 629-605-170 will be considered received when complete with the following information:
- *(a) A map showing protected resource(s) and the harvest area; and*
- *(b) The specific resource(s) that require protection; and*
- *(c) The practices that may affect the protected resource(s) such as road and landing location, disposal of waste materials, felling and bucking and post operation stabilization measures; and*
- *(d) The specific techniques and methods employed for resource protection such as road and landing design, road construction techniques, drainage systems, buffer strips, yarding system and layout; and*
- *(e) Additional written plan content required in individual rules.*

APPLICATION:

This rule section is not used for enforcement. The rules do not require an operator signature on the written plan, though signatures on written plans (and plans for alternate practices) are recommended as an appropriate business practice. SFs are recommended to review complex plans with the operator, which may include on-site discussions.

ADMINISTRATION:

When any written plan is required to be submitted, sufficient information is required to allow the SF to make an assessment of whether or not the operation, if conducted according to the plan will comply with the FPA. This rule states five elements that are required for any written plan.

Map
A map showing the area of operation and any known protected resources must be included in the plan. The map must be of sufficient scale to show the proximity of the operation to any protected resources. A typical scale is 1:12000 (1"=1000') but other scales may be appropriate. Aerial photographs that are corrected for distortion and annotated or tax lot maps may be acceptable if detail is added to display the other map components. The map components include the operation area boundary, protected resources, haul routes and access roads, a scale, a north arrow and at least one section corner, or the necessary components to evaluate the operation. SF can encourage landowners to identify leave tree areas, when applicable, on the map.

Identification of Protected Resources
When known resources are present in or near the operation area, they need to be identified on the map and in the plan.

Exception: Protected bird sites for species listed as threatened or endangered should not be identified on a written plan map, but on a separate map, uploaded to FERNS as an "Other Document," to protect the location of the bird site. Example: If a stream is near the operation area, the written plan must identify the classification and size of the stream (e.g., a small Type F

stream runs along the south harvest boundary). Consultation with the SF is recommended prior to developing a written plan to identify protected resources.

Identification of Practices
The written plan must identify the practices that may affect the protected resources. This may include road construction in or near waters of the state, yarding over or through RMAs, haul routes passing near an active resource site, or other activities that may affect protected resources. Example: If the operator planned a stream crossing on the Type F stream, the crossing site must be indicated on the map and a described in the written plan.

Techniques Used
The written plan must describe how the practices will be conducted to comply with protection standards of the FPA. Specific information that describes the practice and how that practice will be conducted is required for this written plan component.

Statute or Rule Required Content
When written plan content is specified in rules and statutes, written plans must contain this information.

A non-statutory written plan has the same required content as statutory written plans. The SF should review the plan to determine if the plan addresses protection standards and then may provide comments at any time. Any verbal comments should be followed up with written documentation. If the submitted plan demonstrates a good faith effort (e.g., most of the resource protection is addressed but the written plan is unclear on some detail) the SF should "receive" the written plan and recommend in comments the additional attention to key practices needed to ensure rule compliance. If a non-statutory written plan is submitted that is grossly inadequate in to display the map components, the SF should return the written plan as incomplete. When doing this, the SF should provide written comments to the operator explaining what is needed in the written plan to make it complete. In FERNS, the incomplete/returned written plan should be "archived."

When assessing the written plan for completeness, the SF shall consider the adequacy of protection as well as the detail about how protection will be provided. Comments should be provided on written plans if they do not adequately address how the operator will achieve rule compliance. A restatement of the rules is not adequate to ensure compliance. Example: The written plan describes the practices how to directionally fell conifer trees away from a stream, providing more than a statement that trees will be felled away from the water.

Note: The SF is not required to have an engineering license to review a written plan or PFAP for FPA compliance when the plan is written by a person with an engineering license.

WRITTEN PLANS
629-605-0170
Written Plan Content For All Written Plans

(14) In addition to the other requirements in this rule, written plans for operations within 100 feet of domestic water use portions of Type F, Type SSBT or Type D streams must contain a description of the practices and methods that will be used to prevent sediment from entering waters of the state.

APPLICATION:

This rule is not used for enforcement.

ADMINISTRATION:

This rule requires written plans to contain enough information regarding the operation to allow an accurate assessment of the likelihood of compliance with the vegetation retention requirements and protection of waters of the state. If a written plan is submitted and does not contain sufficient information for this assessment, it will be returned to the person who submitted the plan and will not be considered "received."

WRITTEN PLANS
629-605-0170

(15) Modification of the written plan shall be required when, based on information that was not available or was unknown at the time the original written plan was reviewed, the State Forester determines the written plan no longer addresses compliance with applicable forest practice rules. Written plans with modifications required under this section shall not be subject to the provisions of ORS 527.670(10) and (11) relating to waiting periods for written plans.

APPLICATION:

This rule section is not used for enforcement

ADMINISTRATION:

A modified written plan is required when the SF determines, based on new information, that a plan is not adequate to meet the applicable rules or resource site protection goals. The plan needs to address all the items listed in OAR 629-605-0170(12), (13), and (14), and other applicable rules, but does not need to demonstrate that the plan will actually result in compliance with resource protection rules. If the SF thinks the plan does not so demonstrate, the SF documents such in FERNS Formal Comments.

An active operation may continue immediately upon receipt of a suitably modified plan, without a new comment period, if such was applicable. The modified written plan should be uploaded to FERNS as "Written plan with map" and mailed to subscribers that are not E-subscribers.

A comment period is always required when a new statutory written plan is subject to formal public comment and appeal [see section (9) of this rule]. Example: If a previously submitted written plan includes constructing a temporary crossing over a Type F stream and the operator later wishes to construct a permanent crossing, different rule requirements apply. A new written plan (and comment period) is required before construction of the permanent crossing can begin. All other aspects of the operation may continue without a comment period. In some cases a new notification may also be required, as discussed in the guidance for OAR 629-605-0150(9).

When new rules become effective, the written plan included with a notification submitted prior to the effective date of the rules must be amended, if such new rules would affect the resources identified in the written plan. The public comment period does not restart if such rules provide increased resource protection. For example, the SF would make the following FERNS Formal Comment to addressed increased spray buffers for helicopter pesticide applications under ORS 527.786 to 527.798, *"To comply with buffer requirements for helicopter pesticide applications, the landowner has amended the previous submitted SWP as allowed per OAR 629-605-0170(15)."*

Oregon Department of Forestry
Forest Activity Inspection Report

A **Forest Practices Inspection** was conducted on **2022-531-01917**

Operation Name: NORDGREN HL

Inspection Date: 1/25/2022

Operation Status: Pre-operation

ODF Contact Details:

Inspected by: Eric Jacobs

eric.d.jacobs@odf.oregon.gov

ODF Office: Forest Grove

801 Gales Creek Rd
Forest Grove, Oregon 97116
(503) 357-2191

NOAP Contact Details:

Notifier: Samuel A Howard | Stimson Lumber Company

Landowner(s): Samuel A Howard | Stimson Lumber Company

Timber Owner: Samuel A Howard | Stimson Lumber Company

Unit:	Activity:	Operator:
NORDGREN HL	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.

Operations observed were **in compliance** at the time of this inspection.

Inspection Notes:

pre-operation inspection to review operational plan and required harvest modifications for public safety requirements. No issues or concerns observed at this time - wind buffers and modified harvest areas are flagged and look good.

Nordgren HL
Written Plan

1/25/2022

T.1N, R.4W, Sec. 28 & 29

Landowner: Stimson Lumber Company
P.O. Box 68
Forest Grove, OR 97116
(503)-357-2131

Operator: Bighorn Logging Corp.
13820 NW Main Street
Banks, OR 97106
(503)-324-2422

After a review of the harvest unit by ODF Geotechnical Specialist Mike Buren, it was determined that, there are HLHL's that will need protection to minimize potential downslope hazards. Stimson Lumber Company will follow the provided recommendations.

There are two locations in Area A with a Public Safety Risk Level (PSRL) of Substantial. These locations will be left unharvested, with a wind firm buffer around them. These areas are located on the northeastern side of the ridge, which is on the leeward side from the heavy southwestern wind flow. The ridge and lower elevation in the drainage will help with the wind firmness of these areas. Additional protections are be listed below.

Areas C and E have a PSRL of Intermediate, no harvesting will take place in these areas.

Area D has a PSRL rating of Low, this area will be cable logged as normal.

The downhill skyline corridor will be fell and bucked to help minimized potential sediment delivery into the stream and gouging of the stream channel. If the corridor has rutting, it will be water barred by hand.

A Pre-Harvest meeting with the operator will take place to review the technical details of this harvest unit. See operations below for additional protections.

The protection of the PSRL Substantial HLHL's will be as follows:

1. All timber will be directionally fell away from the HLHL's.
2. No equipment will operate within the HLHL's.
3. Equipment trails will be located as to minimize potential runoff into the HLHL's.
4. No limbing or bucking will take place within the HLHL's.
5. No logs will be yarded through the HLHL's.
6. Skyline corridors will be approximately 200 feet apart.
7. Skyline corridors will have a maximum width of 20 feet.
8. Skyline corridors will use natural openings when present.
9. The skyline will not be lowered except during road changes
10. The skyline will be respooled for road changes through the HLHL's.
11. No tailholds or guyline stumps within the HLHL's.
12. Skyline corridors will be water barred if gouging will deliver additional water into the HLHL's.

Samuel A. Howard
Stimson Lumber Company

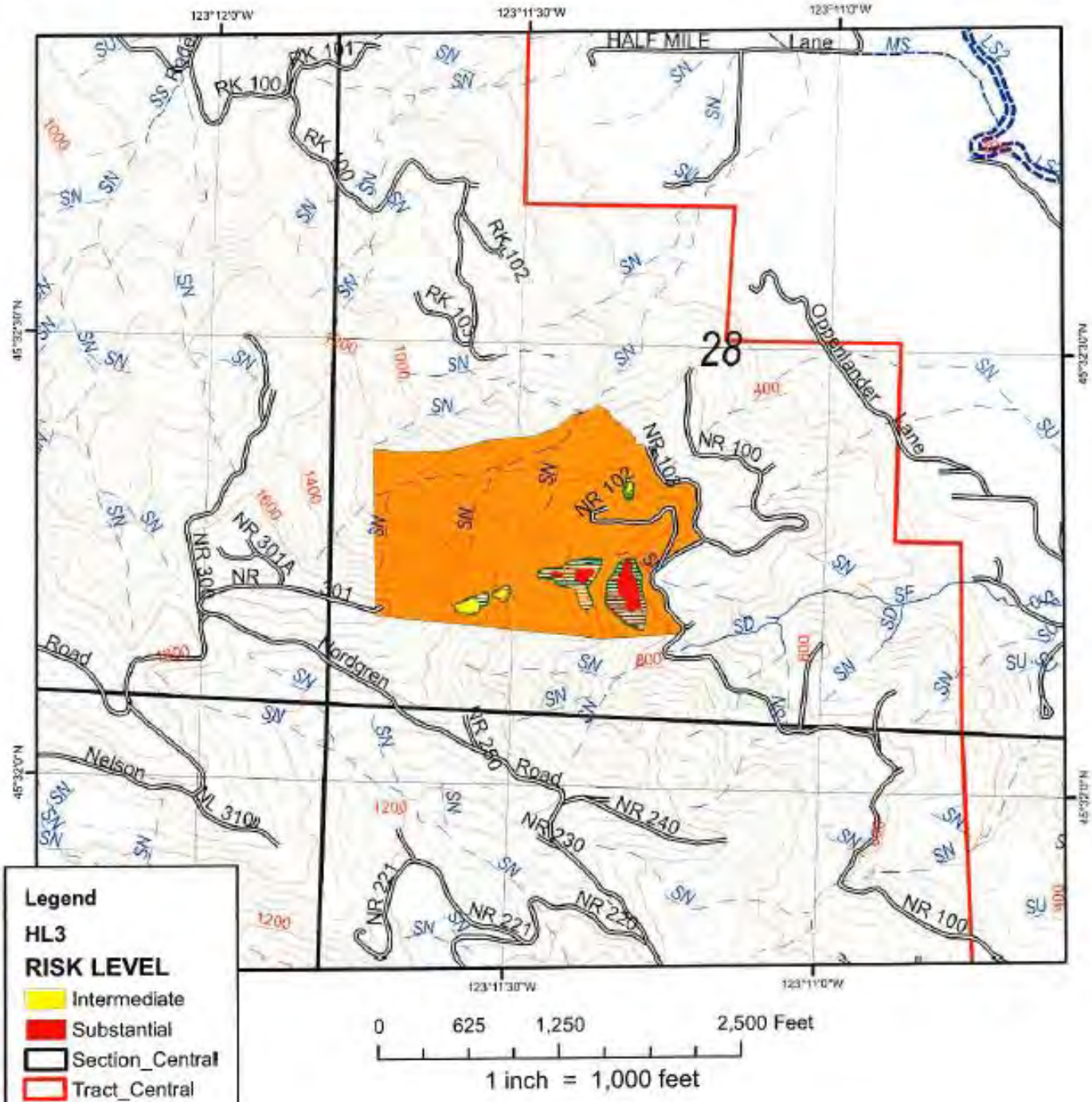
NORDGREN HL

Exhibit "C"

HARVEST UNIT MAP

State: OR
County: WASHINGTON
Project: WEYCO
Tract: NORDGREN

Township: 1N
Range: 4W
Section: 28
Date: 1/25/22



Legend

HL3

RISK LEVEL
- Intermediate
- Substantial
- Section_Central
- Tract_Central

LAYOUT

Method
- Planned
- Leave Trees
- RMA

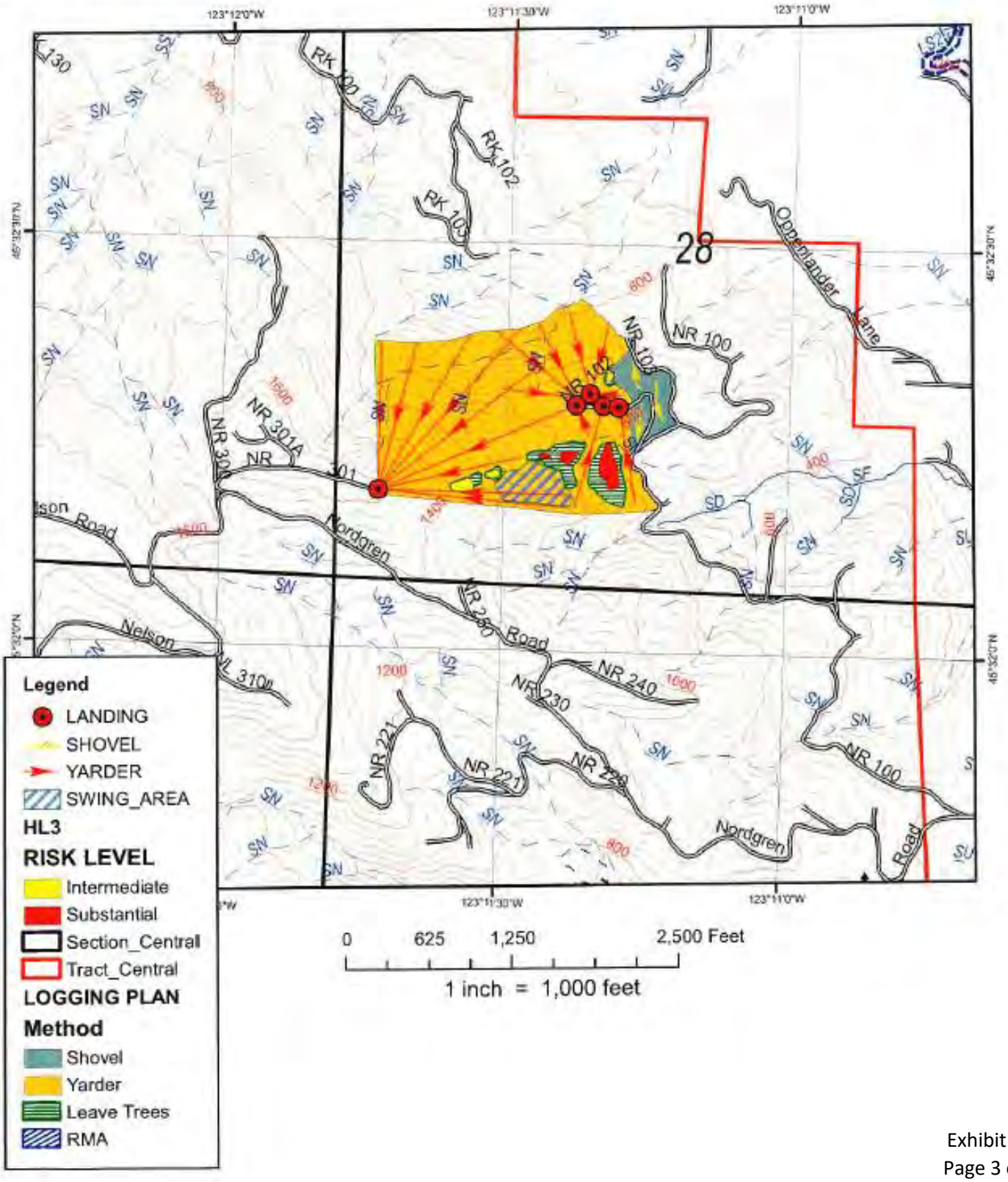
NORDGREN HL

Exhibit "C"

HARVEST UNIT MAP

State: OR
County: WASHINGTON
Project: WEYCO
Tract: NORDGREN

Township: 1N
Range: 4W
Section: 28
Date: 1/25/22



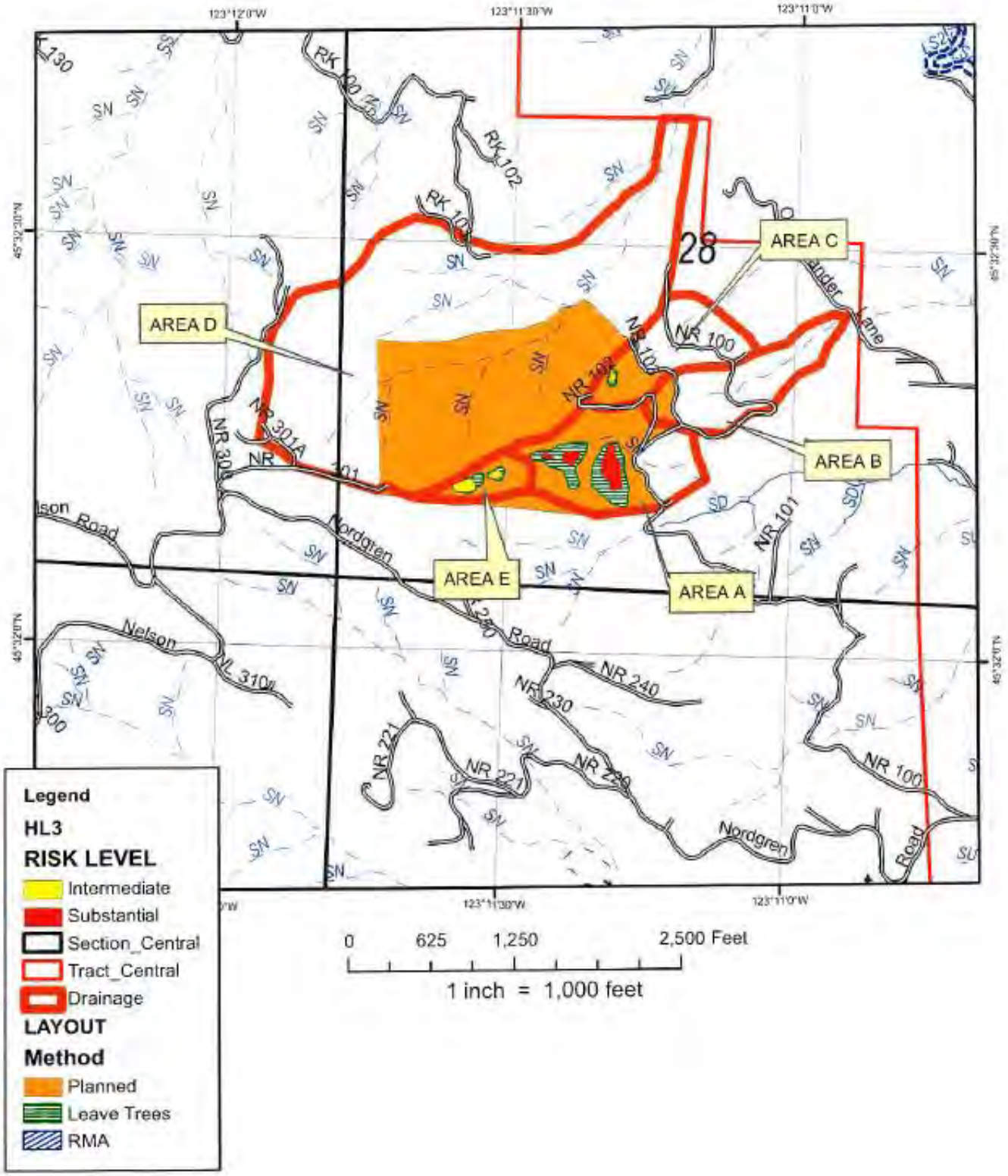
NORDGREN HL

Exhibit "C"

HARVEST UNIT MAP

State: OR
County: WASHINGTON
Project: WEYCO
Tract: NORDGREN

Township: 1N
Range: 4W
Section: 28
Date: 1/25/22



NOTIFICATION OF OPERATIONS/PERMIT TO OPERATE POWER-DRIVEN MACHINERY (NOAP)

Notification Number: 2022-531-01917

Operation Name: NORDGREN HL

This NOAP includes the following for the lands described in the NOAP:

The notifier has given notice to the State Forester that an operation will be conducted.

The Oregon Department of Forestry or local Forest Protective Association has issued a permit to use fire or operate power-driven machinery.

The notifier has given notice to the State Forester and the Department of Revenue of the intent to harvest timber.

Person Submitting the NOAP: Samuel Howard

Date NOAP Submitted: January 26, 2022

Report Generated: March 24, 2022

Waiting Period

You must wait at least 15 days after successful submittal of this NOAP before starting the activities in the NOAP (see OAR 629-605-0150(1)). You may ask the Stewardship Forester to waive this 15-day waiting period, ***but you must wait the full 15 days unless the Stewardship Forester notifies you that you may start sooner.***

Oregon Department of Forestry Contact Info	Operator's Fire Emergency Contact
Forest Grove 801 Gales Creek Rd Forest Grove, Oregon 97116 Phone: (503) 357-2191 Stewardship Forester: Eric Jacobs Email: eric.d.jacobs@odf.oregon.gov	Contact Name: SAMUEL HOWARD Phone: (503) 357-7277

Landowner(s)	Notice to Landowner(s)
Samuel Howard Stimson Lumber Company 49800 SW Scoggins Valley Rd Gaston, Oregon 97119 503-357-7277	Reforestation may be required after timber harvesting. The Oregon Department of Forestry may conduct on-site inspections for compliance with forest practice and fire protection laws. Land use conversion to non-forest use is subject to other state and local regulations, which may affect use or development of a site.

Timber Owner	Notice to Timber Owner
Samuel Howard Stimson Lumber Company 49800 SW Scoggins Valley Rd Gaston, Oregon 97119 503-357-7277	If timber is harvested, the party owning the timber at the point it is first measured is responsible for payment of Oregon timber taxes.

Written Plans

A Written Plan (in addition to this NOAP) is required before operation activities can begin near the protected resources listed with the Unit information or Site Conditions below or otherwise described to you by the Stewardship Forester (OAR 629-605-0170 (2), (3), and (5)). The Written Plan must describe in detail how the resource(s) will be protected during the operation. There is a waiting period for Written Plans that is separate from the notification waiting period. Contact your Stewardship Forester for more information.

Formal Comments from Oregon Department of Forestry

Eric Jacobs on 3/23/2022
Stewardship Forester review and comments on the Statutory Written Plan / Plan for Alternate Practice that was submitted with this NOAP for the Type D stream have been completed and uploaded to the documents section of this NOAP (see "22-01917 SF Comments 3-23-22").

Eric Jacobs on 3/17/2022
THIS IS NOT A FORMAL RESPONSE TO THE WRITTEN PLAN THAT WAS SUBMITTED WITH THIS NOTIFICATION. Three documents have been added to the documents section of this NOAP as "Written Plan with map" to record the public comments received by email within the 14-day public comment period pertaining to the statutory written plan - this does not start a new public comment period, use the timestamp associated with date that the written plan was submitted (dated 03/02/22). The Stewardship Forester has 7 days from the end of the original 14-day public comment period to respond to the written plan .

Eric Jacobs on 3/2/2022
A Statutory Written Plan is required for any operational activity that will directly affect the RMA of the Type D stream. A statutory written plan and a plan for alternate practice was received and placed in the documents section of this NOAP. Stewardship Forester comments may be provided following the 14-day open comment period.

Eric Jacobs on 2/4/2022
Resource review complete: all streams are small type N - no additional protected recourse concerns identified at this time. The Written Plan submitted with this NOAP is not a statutory written plan requirement and therefore does not require a 14-day public comment period. Written Plan has been reviewed. Ensure that public safety requirements for high landslide areas are followed. Do not operate ground-based machinery on any HLHL slopes or on slopes that are greater than 60% and that are within areas having Public Safety Risk Level (PSRL) of intermediate or substantial. As requested, a waiver of the 15-day waiting period is granted for activities to begin in 'Area D' shown on the attached map which has received a PSRL rating of low. Activities in the remaining areas (those other than 'Area D') may begin after the end of the waiting period on 02/11/2022.

Site Conditions (reported by the Notifier)

Stream within 100 feet of area.

High Landslide Hazard Locations within area.

Slope of steepest 1/3 area: 80 %.

Notices

Permission from Landowner and Timber Owner Required: Submitting this notification does ***not*** give permission to enter someone's land or remove forest products. Anyone doing so must first obtain permission from the landowner and timber owner.

Pesticide Use: Pesticide users must follow all pesticide product label requirements, including any that prohibit applications near or into streams or other water bodies! Pesticide users must be sure the label that comes with the pesticide product allows the planned use! Contact the Oregon Department of Agriculture here or at 503-986-4635 for information on allowed uses of pesticide products.

Operations Near Utility Lines: If you are conducting timber harvesting or road construction within 100 feet of overhead utility lines contact the local utility in accordance with ORS 757.805 - Oregon's Overhead Safety Act and OAR 437-007-0230 - Power Line Safeguards. Identification tags are located on each pole.

Call the Oregon Utility Notification Center at 811 at least 2 business days before starting timber harvesting, road construction, or any other activities involving excavation that may affect an underground utility line. The Center will coordinate with the appropriate utility companies to locate underground utility lines that may be affected by your activities.

Using Water for Pesticides or Slash Burning: If you plan to use on-site water (water from a stream, for example) to mix pesticides or for slash burning, you must provide a copy of this NOAP to the local offices of the Oregon Water Resources Department and the Oregon Department of Fish and Wildlife (see ORS 537.141).

Registrants & Subscribers: There may be registrants and/or subscribers who receive this Notification. See the Notification Summary page within the E-Notification system or contact ODF for more details.

NOAP Changes: The notifier must inform the Oregon Department of Forestry of any changes in a NOAP before the activity takes place. A new NOAP may be required.

Unit 1 of 3: NORDGREN HL

44.7 acres Washington County(s) T1N R4W Sec28 Regulated Use Area: NW-3

Operator: Bighorn Logging Bighorn Logging Corp. 13820 NW Main Street Banks, Oregon 97106 503-324-2422	**Activity**: Clearcut/Overstory Removal **Start**: 3/9/2022 **End**: 12/31/2022	**Method(s)**: Cable, Ground **Quantity**: 1979.00 MBF

Unit Map: NORDGREN HL

Unit 2 of 3: NORDGREN HL

7.8 acres Washington County(s) T1N R4W Sec28 Regulated Use Area: NW-3

Operator: Bighorn Logging Bighorn Logging Corp. 13820 NW Main Street Banks, Oregon 97106 503-324-2422	**Activity**: Clearcut/Overstory Removal **Start**: 3/9/2022 **End**: 12/31/2022	**Method(s)**: Cable, Ground **Quantity**: 345.00 MBF

Unit Map: NORDGREN HL

Unit 3 of 3: NORDGREN HL

6.4 acres Washington County(s) T1N R4W Sec28 Regulated Use Area: NW-3

Operator: Bighorn Logging Bighorn Logging Corp. 13820 NW Main Street Banks, Oregon 97106 503-324-2422	**Activity**: Clearcut/Overstory Removal **Start**: 2/9/2022 **End**: 12/30/2022	**Method(s)**: Cable, Ground **Quantity**: 283.00 MBF

Unit Map: NORDGREN HL

Oregon Department of Forestry
Forest Activity Inspection Report

A **Forest Practices Inspection** was conducted on **2022-531-01917**

Operation Name: NORDGREN HL

Inspection Date: 2/18/2022

Operation Status: Active Operation

ODF Contact Details:

Inspected by: Eric Jacobs

eric.d.jacobs@odf.oregon.gov

ODF Office: Forest Grove

801 Gales Creek Rd
Forest Grove, Oregon 97116
(503) 357-2191

NOAP Contact Details:

Notifier: Samuel A Howard | Stimson Lumber Company

Landowner(s): Samuel A Howard | Stimson Lumber Company

Timber Owner: Samuel A Howard | Stimson Lumber Company

Unit:	Activity:	Operator:
NORDGREN HL	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.

Operations observed were **in compliance** at the time of this inspection.

Exhibit A12
Page 1 of 1

Oregon Department of Forestry
Forest Activity Inspection Report

A **Forest Practices Inspection** was conducted on **2022-531-01917**

Operation Name: NORDGREN HL

Inspection Date: 2/23/2022

Operation Status: Active Operation

ODF Contact Details:

Inspected by: Eric Jacobs

eric.d.jacobs@odf.oregon.gov

ODF Office: Forest Grove

801 Gales Creek Rd
Forest Grove, Oregon 97116
(503) 357-2191

NOAP Contact Details:

Notifier: Samuel A Howard | Stimson Lumber Company

Landowner(s): Samuel A Howard | Stimson Lumber Company

Timber Owner: Samuel A Howard | Stimson Lumber Company

Unit:	Activity:	Operator:
NORDGREN HL	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.

Operations observed were **in compliance** at the time of this inspection.

Inspection Notes:

Received notice of concern that operations may be taking place within the type D drainage again. Observed felling operations which were still working in the drainage system to the south (not within the type D drainage).

Nordgren HL
Washington Co.

2/24/2022

T.1N, R.4W, Sec. 28

Landowner: Stimson Lumber Company
49800 SW Scoggins Valley, Rd
Gaston, OR 97119
(503)-357-2131

Operator: Bighorn Logging
13820 NW Main St.
Banks, OR 97106
(503)-324-2422

Protected Resource:

Stream 1:
Approximately 1,770 feet of Spring Branch a tributary of Gales Creek
Small Type D (RMA = 20 ft.)

Stream 2:
Approximately 470 feet of Spring Branch a tributary of Gales Creek
Small Type D (RMA = 20 ft.)

Stream 3:
Approximately 525 feet of Spring Branch a tributary of Gales Creek
Small Type D (RMA = 20 ft.)

Stream 4:
Approximately 300 feet of Spring Branch a tributary of Gales Creek
Small Type D (RMA = 20 ft.)

Stream 5:
Approximately 160 feet of Spring Branch a tributary of Gales Creek
Small Type D (RMA = 20 ft.)

The main stream (Stream 1) was originally classified as small type N. ODF FERNS has the intake for the domestic water located in a different drainage, approximately 500 feet to the north. Once this was brought to our attention, we stopped cutting operations within this drainage. Then designated the remaining live water within this drainage as small type D, updating our GIS.

The buffer of these streams will meet or exceed the 20 foot rule requirement, with the actual buffer ranging from 20 feet up to 90 feet in some areas. This was done to improve protection of the resource from felling and logging operations. Additionally, standing timber, approximately 3.8 acres, along the northern side of the main stem will be left to minimize potential disturbance of the small type D and its related 20 foot RMA. It was Stimson's opinion that the removal of the trees in this area could have resulted in unacceptable amounts of damage to the trees within the RMA and potentially increase soil disturbance.

A Plan for Alternate Practice for logging and restoring the RMA of the newly designated small Type D stream is attached.

The RMA's have been flagged with blue and white stripped "Lake and Watercourse Protection Zone" ribbon pink "Timber Harvest Boundary" ribbon and tagged with orange "Reserve Area" tags. See operations below for additional protections.

Operations: The protection of the RMA will be as follows:

1. All timber will be directionally fell away from the RMA.
2. No limbing or bucking will take place within the RMA.
3. No heavy equipment will operate within the RMA.
4. Retain all understory vegetation within 10 HWL.
5. Retain all trees leaning over the channel.
6. Skyline will be respooled for road changes.
7. Skyline corridors will use natural openings when present.
8. Logs will be fully suspended over the stream channel.

Samuel A. Howard
Stimson Lumber Company

Plan for Alternate Practice for

Site Specific Vegetation Retention Prescription for

Streams and Riparian Management Areas

(OAR 629-642-0700)

Landowner Name: STIMSON LUMBER COMPANY

Landowner Address: 49800 SW SCOGGINS VALLEY RD, GASTON, OR 97119

Landowner Telephone Number: (503)-357-2131

Operator Name: BIGHORN LOGGING

Operator Address: 13820 NW MAIN ST, BANKS, OR 97106

Operator Phone Number: (503)-324-2422

Notification Number: NOAP 2022-531-01917

Legal Description: T 1N R 4W Section 28

Stream Name: SPRING BRANCH

Stream Size: S (S, M, or L) Stream Class: D (F, D, or N)

Length of Stream Involved:

Side 1: 810 feet

Side 2: 620 feet

Width of RMA: 20 feet

Stream Size: S (S, M, or L) Stream Class: D (F, D, or N)

Length of Stream Involved:

Side 1: 310 feet

Side 2: 310 feet

Width of RMA: 20 feet

Additional Resource Information:

The main stream, Spring Branch, was originally classified as a small type N. ODF FERNS has the intake for the domestic water located in a different drainage, approximately 500 feet to the north. Once this was brought to our attention, we stopped cutting operations within this drainage. Then designated the remaining live water within this drainage as small type D, updating our GIS.

The buffer of these streams will meet or exceed the 20 foot rule requirement, with the actual buffer ranging from 20 feet up to 90 feet in some areas. This was done to improve protection of the resource from felling and logging operations. Additionally, standing timber, approximately 3.8 acres, along the northern side of the main stem will be left to minimize potential disturbance of the small type D and its related 20 foot RMA. It was Stimson's opinion that the removal of the trees in this area could have resulted in unacceptable amounts of damage to the trees within the RMA and potentially increase soil disturbance

The total additional RMA will be approximately 1,140 linear feet and with a width ranging from 20 to 90 feet, on three of the tributaries to the main channel of the estimated 800 linear feet of impacted Type D stream.

Removal of the felled trees will increase the restoration of the stream RMA through tree planting.

Site Specific Harvesting Management/Protection Measures:

The logging plan will be as follows:

On stream 1, harvesting will begin outside the RMA. The south side will be logged up to the edge of the small type D, approximately 20 feet. Then the north side will be logged with the logs being yarded over the fell and buck within the 20 feet RMA. Once the logging is completed outside of the RMA, the fell and buck will be removed from the RMA and stream channel. During this part of the operation, on each skyline corridor, the RMA and stream will be cleared of logging debris. A final clean-up will take place after logging of the RMA and stream channel.

Stream #2 will be logged in the same manner.

Exposed soil within all RMA's that may deliver sediment will be seeded and mulched to help restore vegetation within the RMA. Skyline corridors that have gouging and may deliver sediment into stream will be water barred by hand and seeded. Reforestation will take place as soon as possible to restore vegetation to the area.

Landowner/Operator Signature: _____ Date: 2/24/2022

(Include a Map Showing the Operation Area and Protected Resources)

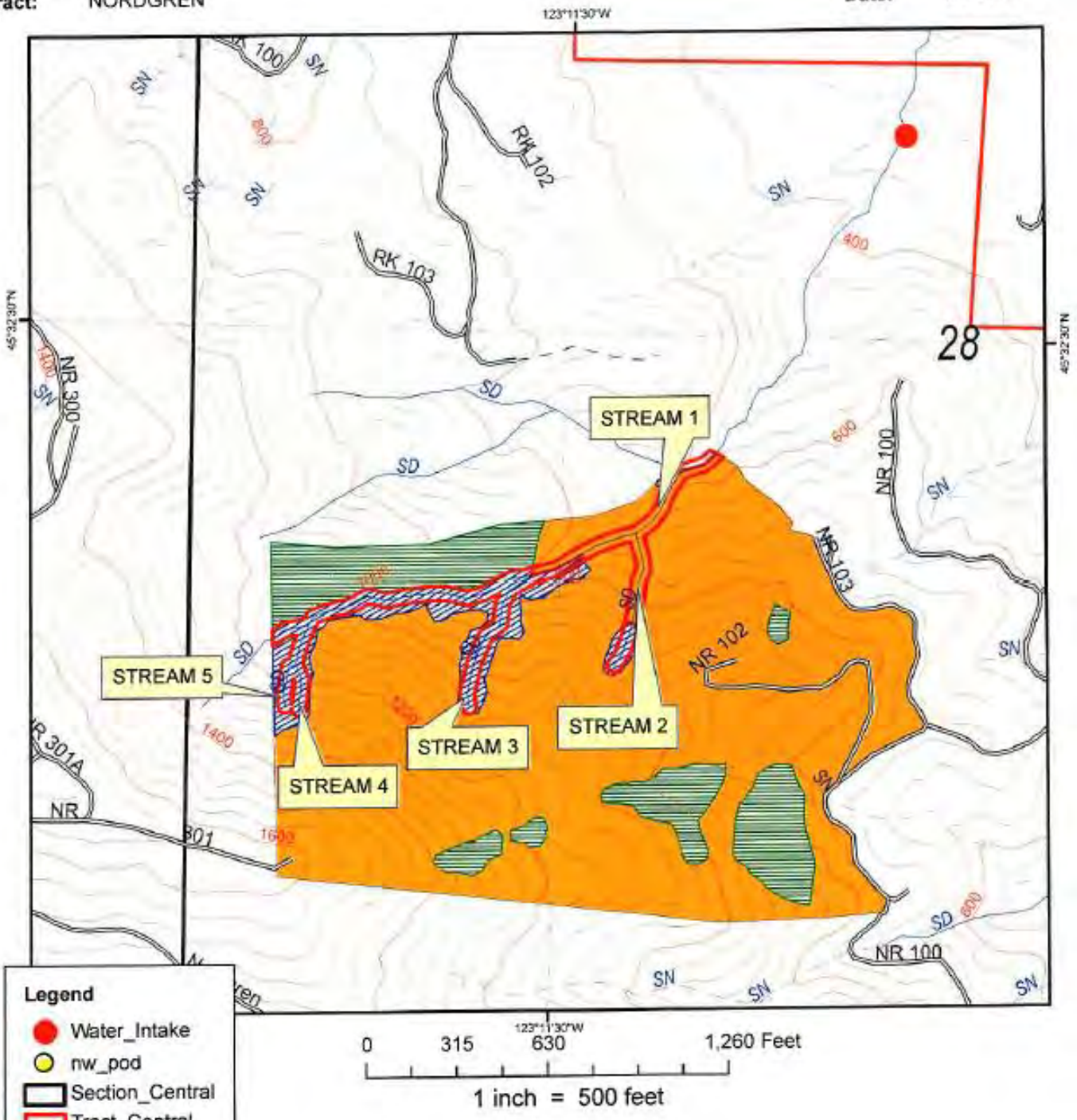
NORDGREN HL

Exhibit "C"

HARVEST UNIT MAP

State: OR
County: WASHINGTON
Project: WEYCO
Tract: NORDGREN

Township: 1N
Range: 4W
Section: 28
Date: 2/24/22



Legend

- Water_Intake
- nw_pod
- Section_Central
- Tract_Central
- 20 ft RMA

LAYOUT

Method

- Planned
- Leave Trees
- RMA

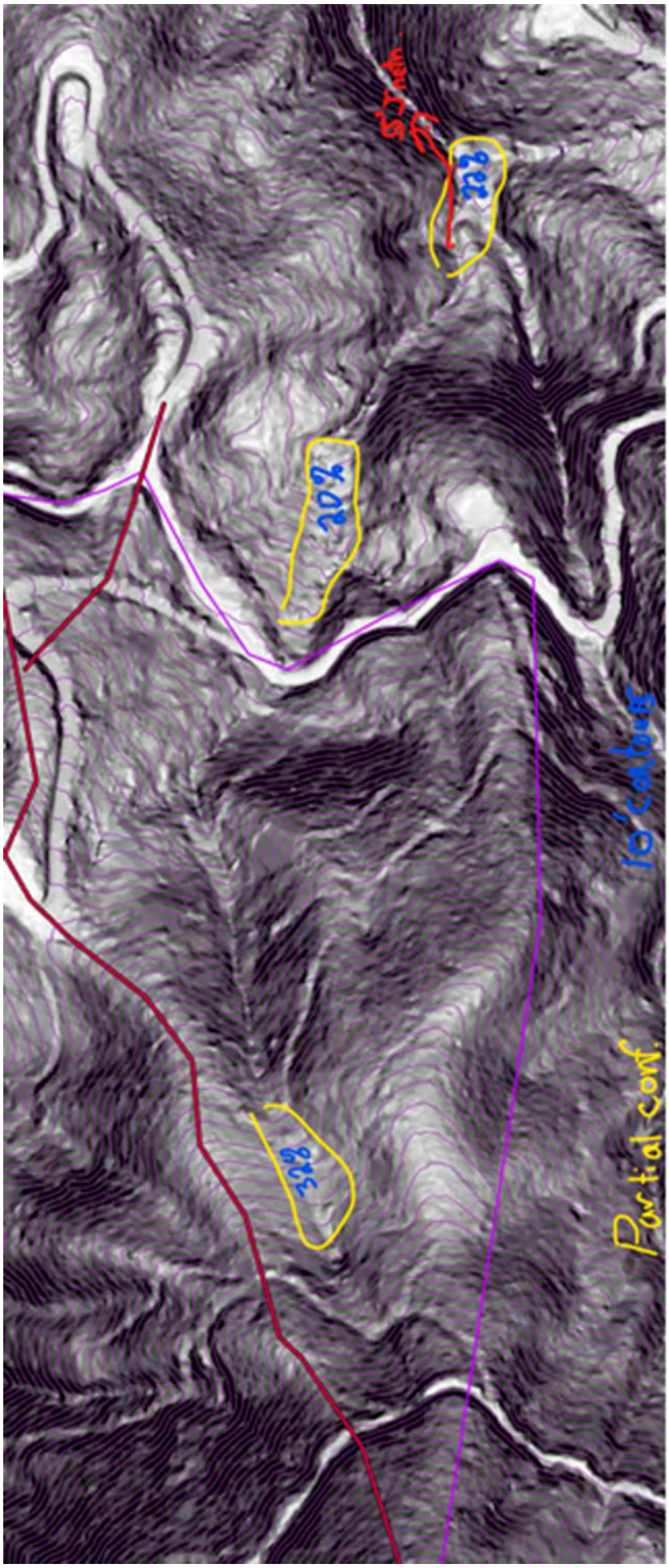


Exhibit A15
Page 1 of 1

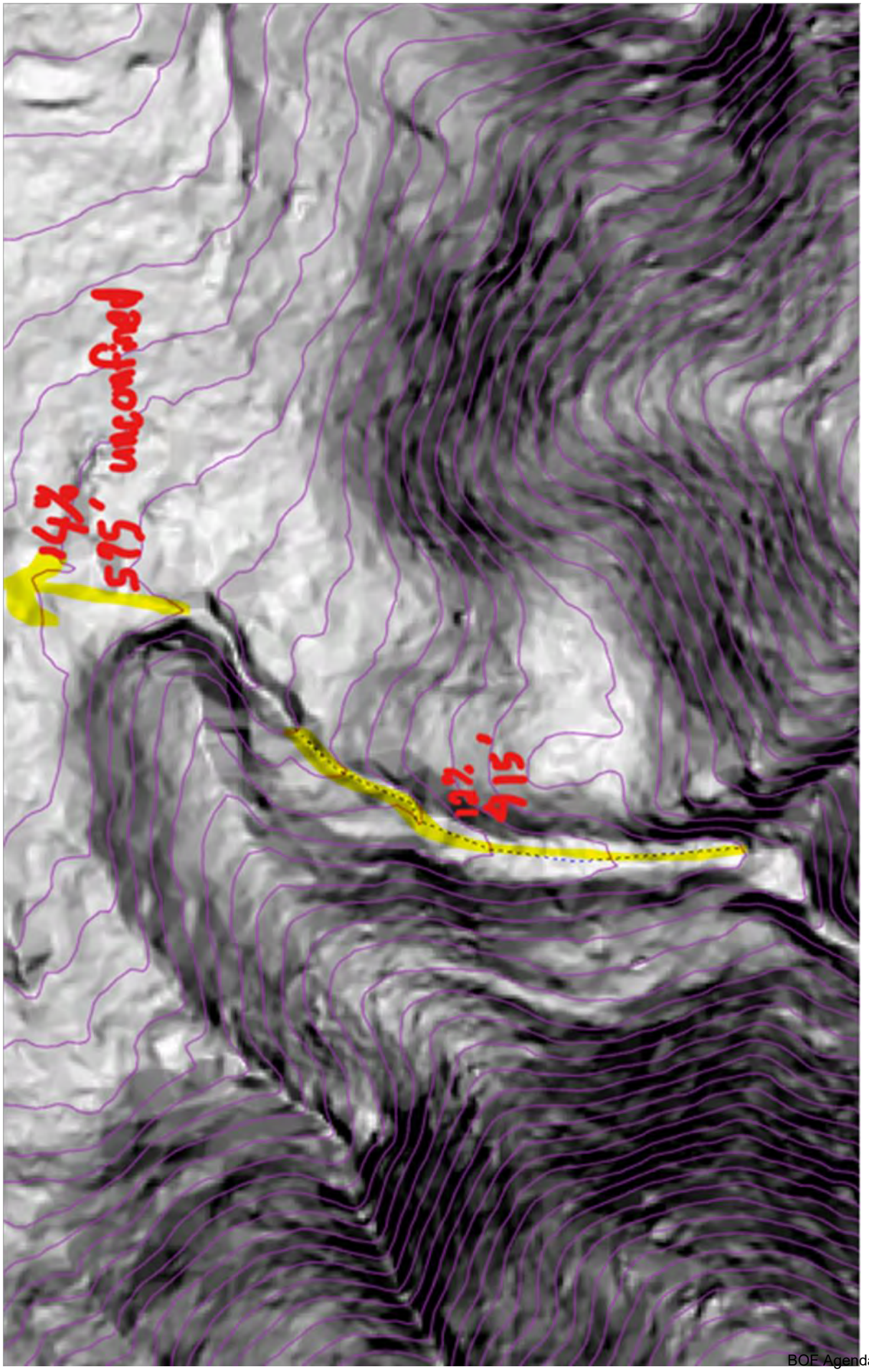


Exhibit A16
Page 1 of 1

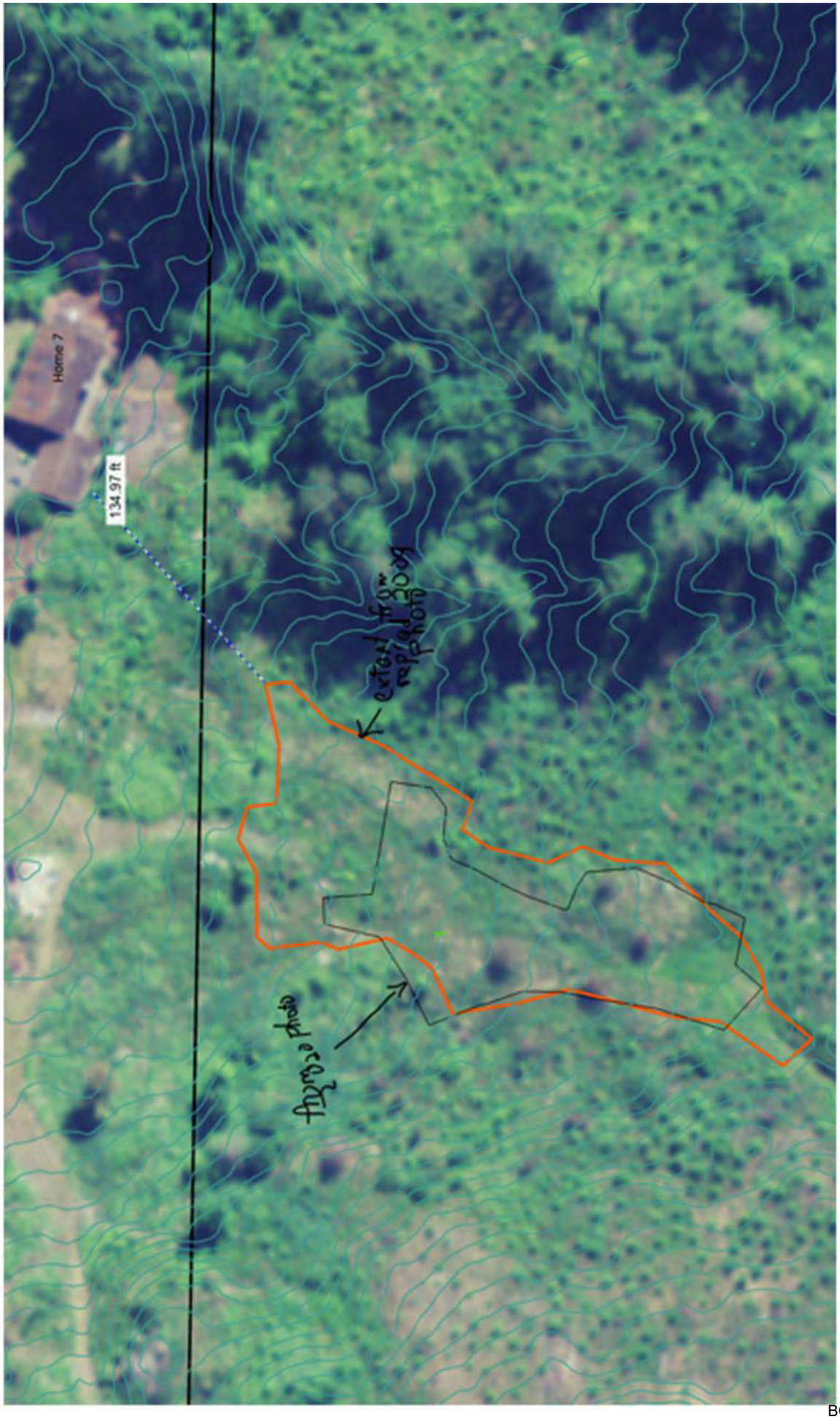


Exhibit A17
Page 1 of 1

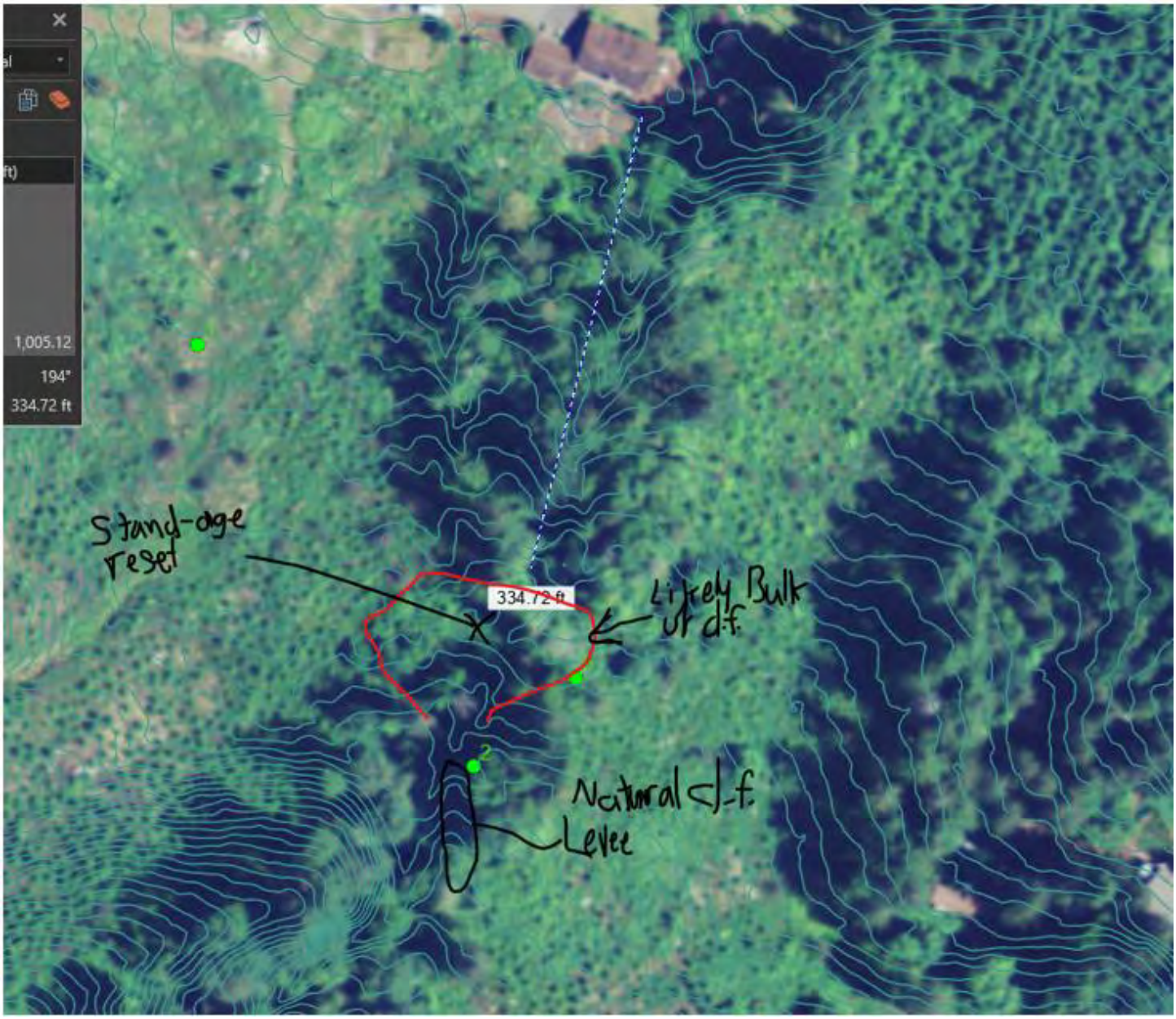


Exhibit A18
Page 1 of 1

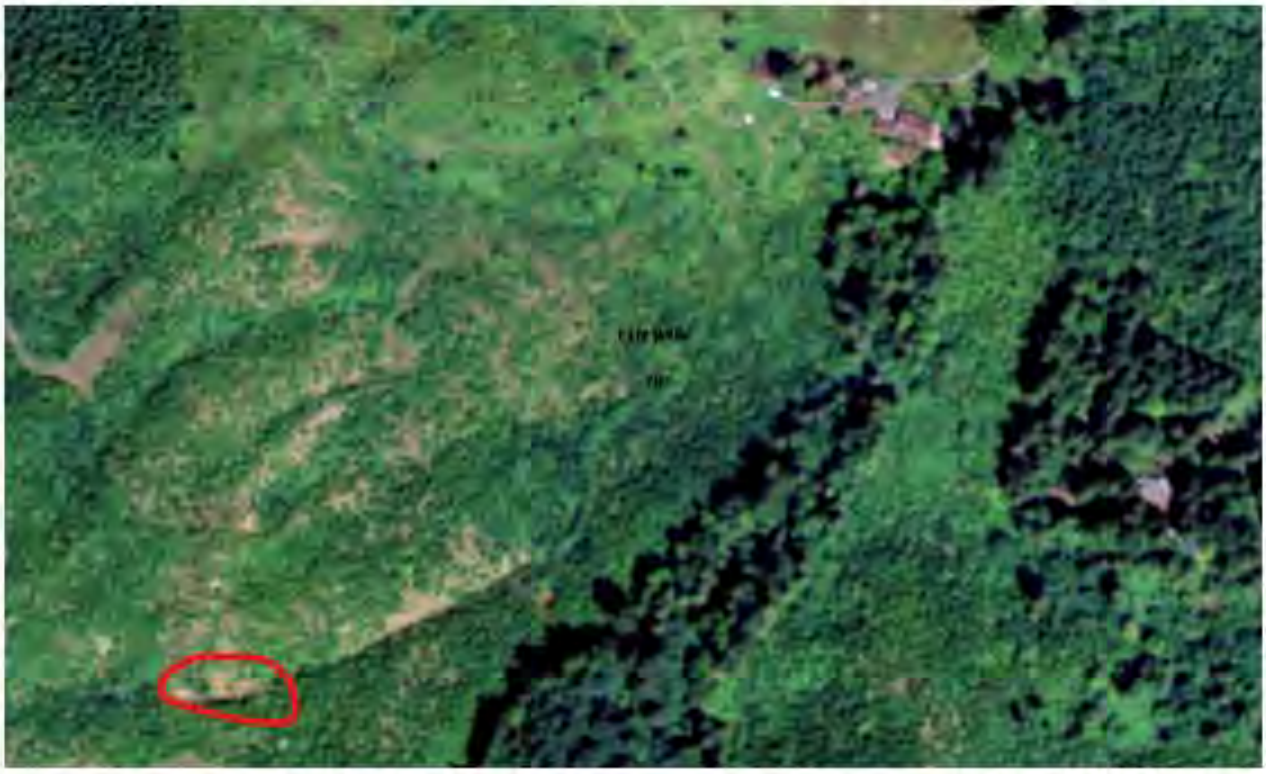
Ortho Review 2/28/2022

Two gullies above Lund residence (photo). Purpose is to look for ortho evidence of event about 20 years ago that "delivered" "debris" to the residence. Photo shows location of possible initiation site evidenced in 2006?, 2009 photos.

There an indistinct d.f. impact zone showing in the photos, and no debris at the home can be seen in photos. Young alder in the lower part of the gully best show the path.

Should talk to Mr. Lund about the event to get more clarity on its character to see if we can distinguish between HCFF? D.F.? Stream avulsion? Upon visit debris field was located....

Date	Notes
8/2002	Unit directly W and SW of Lund residence timbered
8/2003	Unit directly W and SW of Lund residence has been harvested
8/2006	Very blurry, disturbance may be showing its self. No d.f. track noted.
Summer 2009	Slide disturbance in small head wall in unit noted. DF delivery from that drainage not evident to home. D.F. track noted below failure is getting green. Brown patch directly behind home seems to be ivy removal (noted on site visit)
8/2011	Brown area behind Lund home still evident (not drainage related?, yardwork?)
Summer 2012	Brown area behind Lund home still evident.
Summer 2012	Bare patch still evident.



Oregon Department of Forestry
Forest Activity Inspection Report

A **Forest Practices Inspection** was conducted on **2022-531-01917**

Operation Name: NORDGREN HL

Inspection Date: 3/1/2022

Operation Status: Active Operation

ODF Contact Details:

Inspected by: Eric Jacobs

eric.d.jacobs@odf.oregon.gov

ODF Office: Forest Grove

801 Gales Creek Rd
Forest Grove, Oregon 97116
(503) 357-2191

NOAP Contact Details:

Notifier: Samuel A Howard | Stimson Lumber Company

Landowner(s): Samuel A Howard | Stimson Lumber Company

Timber Owner: Samuel A Howard | Stimson Lumber Company

Unit:	Activity:	Operator:
NORDGREN HL	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.

Operations observed were **in compliance** at the time of this inspection.

Inspection Notes:

Felling operations still working outside of the type D drainage. Streamside buffers in the type D drainage have been flagged to include the remaining length of main channel above the water intake and all tributaries. Under streamside protection rules, only designated lengths of the main channel above the intake have required RMA buffers. Operations observed at this time are within compliance of the HLHL and stream protection requirements.

Oregon Department of Forestry
Forest Activity Inspection Report

A **Forest Practices Inspection** was conducted on **2022-531-01917**

Operation Name: NORDGREN HL

Inspection Date: 3/2/2022

Operation Status: Active Operation

ODF Contact Details:

Inspected by: Eric Jacobs

eric.d.jacobs@odf.oregon.gov

ODF Office: Forest Grove

801 Gales Creek Rd
Forest Grove, Oregon 97116
(503) 357-2191

NOAP Contact Details:

Notifier: Samuel A Howard | Stimson Lumber Company

Landowner(s): Samuel A Howard | Stimson Lumber Company

Timber Owner: Samuel A Howard | Stimson Lumber Company

Unit:	Activity:	Operator:
NORDGREN HL	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.
	Clearcut/Overstory Removal	Bighorn Logging | Bighorn Logging Corp.

Operations observed were **in compliance** at the time of this inspection.

Inspection Notes:

This inspection did not directly observe the harvest unit but looked at the lower reaches of the type D drainage. ODF Geotech and district personnel discussed history of the area with local residents and Stimson representative. Following initial discussion, conducted a tour of the drainage from the house to below the harvest unit, which included the domestic water intake site. Geotech to complete further review of initial assessment (dated 1/5/22) and respond back to district personnel.

JACOBS Eric D * ODF

From: BUREN Michael R * ODF
Sent: Friday, March 04, 2022 8:07 AM
To: JACOBS Eric D * ODF
Subject: Nordgren 2022-531-01917

Follow Up Flag: Follow up
Flag Status: Flagged

Eric,

Yesterday I met yourself and Eric Peters from the District, Dave Sweeney from Stimson, and neighbors Messrs. Lund, Bonebreak, Kral (and Dan his "employee") at the Lund residence. I had formerly made an evaluation of public safety and landslides in the context of the landslides and public safety rule-set (FPA 629-623, see email of January 5th) in which I had designated various steep slopes in several basins above neighborhood structures to require harvest modifications. Various leave areas and some additional wind-firm buffers were later designated by Stimson, which I reviewed. Those will be (are) locations which will remain timbered during the operation.

The meeting was arranged by yourself at the request of Mr. Kral in order to hear neighbors relate their knowledge of slides/sedimentation in the area, some of which directly related to the Lund residence. I am writing this to a wider audience, than I normally would, since there is a lot of interest in our processes. In my evaluation of Jan. 5th, I had recognized various slope stability features in the area, but I did not have direct knowledge of the events the neighbors related. I had designated the Lund residence as having a "Low" downslope public safety risk. Various risk levels require different administration of the upland harvest and I wanted to understand the events fully in case revision of the risk level was warranted.

History Related by Neighbors and Observations from the Walk and Orthophotos

Two important events occurred near the Lund residence. The earliest was in 1996 and another in 2007.

1) In 1996 a debris torrent came down drainage "D". This is the main drainage out of the north part of the harvest unit (see map included with my evaluation of Jan 5). On our walk, we noted the area where the stand age was reset in the depositional area evidenced by younger alder. The downslope edge of the young alder stand is about 300 feet above the home. Just above that point is where part of the debris split and followed two paths toward the Lund residence along two separate, shallow, ill-defined drainageways. In the area of the split drainage and below the area of stand reset, large trees remain in the buffer formerly left by harvest in the 80s. These two drainage-ways are shallow, about 3 feet deep, as they make their way past either side of the home.

   Perhaps concurrently with the deposition of most of the debris upslope, some forward momentum continued to deliver debris down these two little drainage-ways. Alternatively, shortly after the debris torrent came to rest, the stream reworked and redistributed a portion of the debris toward the home. Mr. Lund said mud and small sticks were deposited to the E and W of his home by overflowing the two drainage-ways by about 12 inches. The drive was covered and the stream-side edge of the hot tub deck posts were buried. No large woody debris was transported to the home.

2) The event of 2007 came out of the much smaller drainage directly N of the first event. This unit was harvested in winter of 2002-2003 and is outside the present unit in discussion, but its behavior may be relevant to predicting impacts to the home. The deposit looks to be up to three feet thick in the main depositional area. The downslope edge of that area is about 100ft from the garage. As in the 1996 event, a portion of debris continued on from the main depositional area, following the slope down and through the small barn on the W edge of the drive to a depth of 8 to 12 inches. This pathway is separate from the other two mentioned in #1 above.

Discussion

Obviously the area is subject to slide activity as mentioned above. Other events were mentioned by neighbors to the southeast along the hill-front. Also, review of the terrain shows very large fan-like features below many of the drainages in the area. The one where the Lund residence is located contains scattered boulders below, near and upslope of the home. These are evidence of slide deposition, rather than of alluvial origin. While in the drainage, I noted large boulders in/on this feature. This fan has old growth stumps, which would put its deposition likely no later than about 400 years ago. It looks to be a debris field from some type of deep-seated, mega failure of the uplands. These features are discernable in many areas in the Coast Range and their foothills, between hill-fronts and valley bottoms and are poorly understood by geologists in their mechanism of failure and timing. They are however not of the variety of landslide that the public safety rules were developed upon. Those rules relate to "shallow rapidly moving landslides", generally initiated to depths comparable to the rooting depth of trees. Shallow, rapidly moving landslides can be initiated by forest practices [629-623-0000(1)] – thus the rule-set and the reason for my part in this. Slides also initiate in forested terrain not affected by forest practices, therefor structures located below steep drainages often have safety risk regardless of upland land use.

My visit to the area surrounding the Lund residence has not changed my evaluation of January 5th. In the context of the rule-set, the risk to public safety is "Low" at the Lund residence. The neighbors may wonder why if there is evidence of slide activity and sediment delivery, is my determination unchanged? The rules focus the analysis on serious bodily injury or death, not simply if a slide can occur or if there is chance of sediment delivery. In the introduction to the rules it states, 629-623-0000 (3):
The purpose of the shallow, rapidly moving landslides and public safety rules is to reduce the risk of serious bodily injury or death caused by shallow, rapidly moving landslides directly related to forest practices….

The reasons for my conclusion include:

1) The bulk of both events (2007 and 1996) terminated where they are expected to terminate, proximal to the loss of confinement, at the mouth of the gullies. The downslope edge of the bulk of material is still about 100 ft and 300 ft from the home, respectively. The home is about 550 ft from loss of confinement at both canyon mouths (to be clear, only the 1996 event originated from the unit in question while the 2007 event originated from a harvest area conducted in the winter of 2002-03).
2) The possible movement of a portion of material in the shallow drainage-ways does not carry the energy to transport trees/large wood (which can be very destructive), or to have the force needed to avulse its channel and seriously impact the home.
3) There are over 300 ft of large trees in the buffer below the unit that can slow and stop the movement of potential debris to the home.
4) From expected loss of confinement, the terrain is open and about 15% average slope. The drainageways are too shallow to provide adequate confinement to transport much debris.

If you have questions or need clarification please contact me.

Further Reading

Oregon Department of Forestry, Administrative Rules, Division 623 Shallow, Rapidly Moving Landslides and Public Safety. Available online at:
https://secure.sos.state.or.us/oard/displayDivisionRules.action;JSESSIONID_OARD=Nf3AIMCnNIz1It0QRFu8-X3AfRX5O5AMUeC0p__JY_EORbxPBV99!-1969788327?selectedDivision=2867

Oregon Department of Forestry, "High Landslide Hazard Locations, Shallow, Rapidly Moving Landslides and Public Safety: Screening and Practices, Forest Practices Technical Note Number 2, Version 2.0" (2003).
https://www.oregon.gov/ODF/Documents/WorkingForests/HighLandslideHazardLocationsTechNote2.pdf

Oregon Department of Forestry, "Determination of Rapidly Moving Landslide Impact Rating, Forest Practices Technical Note Number 6, Version 1.0" (2003). Available online at:
https://www.oregon.gov/ODF/Documents/WorkingForests/LandslideImpactRatingTechNote6.pdf

Mike Buren MS, CEG
Geotechnical Specialist
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o: 503-945-7647
c: 503-724-2387
michael.r.buren@oregon.gov

CERTIFIED OREGON MICHAEL R. BUREN No. E1884 ENGINEERING GEOLOGIST

Exp 10/31/2022

Oregon

Department of Forestry
Forest Grove District
Forest Grove
801 Gales Creek Rd
Forest Grove, Oregon 97116
Phone: (503) 357-2191

Public Comment(s) on Written Plan

for Notification 2022-531-01917, *NORDGREN HL*

You are receiving this report because you are a party on Notification *2022-531-01917*. Below is the summary of public comment(s) submitted for the written plan on Notification *2022-531-01917, NORDGREN HL*.

For any questions regarding these comments or the notification, please contact Eric Jacobs at (503) 357-2191 and eric.d.jacobs@odf.oregon.gov.

Public Comments:

Written Plan File Name: Small D and Alt Plan Nordgren with map

George Kral - 3/16/2022
"The new plan is not adequate to address water quality and slope stability concerns for many reasons. I am sending detailed comments in an email to Stimson and ODF.
Thank you
-George Kral"

JACOBS Eric D * ODF

From: George Kral <george@schollsvalley.com>
Sent: Wednesday, March 16, 2022 6:02 PM
To: JACOBS Eric D * ODF
Cc: CAFFERATA Mike J * ODF; PERKINS Eric * ODF; SWEENEY David; llchinook@aol.com; GRAY Scott; MUKUMOTO Cal T * ODF; BUREN Michael R * ODF; Alan Bonebrake; Laurie Lundy; Timothy J. Bernasek
Subject: Comments on NORDGREN small D plan
Attachments: NordgrenCommentGK.DOCX

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Eric

My comments are attached.

Thank you,
-George

George Kral, Ph.D.
Forester & Botanist
Scholls Valley Native Nursery LLC

george@schollsvalley.com
https://www.schollsvalley.com/
4036 NW Half Mile Ln, Forest Grove, OR 97116

Nordgren HL is a logging unit in Spring Branch Canyon on Gales Peak, which lies to the west of our farm. The unit encompasses the steepest and most unstable ground on the peak, with a history of generating slides that have affected downslope properties, including ours, according to mapping by the Oregon Department of Geology and recent neighborhood history. A review of facts relevant to the resources in this written plan:

1. In 2002, Spring Branch was designated a class D stream, presumably by ODF, as indicated on a previous Weyerhaeuser logging plan. Both ODF and Stimson were aware, or should have been aware, of this water right prior to the inception of the current operation;
2. When notified, ODF refused to believe that the water right existed in this location and permitted Stimson to continue logging for four days without any modifications;
3. By the time ODF finally asked Stimson to halt felling, approximately 6 acres at the bottom of the canyon had already been felled, exposing hundreds of feet of the stream with extremely steep, fragile banks;
4. No buffer at all was left on this Class D stream as required by the FPA;
5. No written plan was prepared as required by the FPA;
6. A written plan submitted on 2 March 2022, after logging was well underway, fails to address damage already done to the stream;
7. Buffers proposed in the revised plan do not mitigate, and may exacerbate, extreme instability of slopes above protected streams. For example, a similar stream buffer in a recent ODF clearcut 45.634°N -123.565°W blew out during a minor rain event, resulting in a 2-acre debris fan that covered a road and temporarily blocked a tributary of the Wilson River;
8. Basins of similar or less extreme steepness (Rock Creek 1996, Dodson 1996, Woodson 2007), are known by ODF to have produced debris flows of a nature that, in Spring Branch, would disrupt domestic water use and threaten downslope lives and properties;
9. OAR 629-623-0000 through 629-623-0800 provide protections for life and property from logging-associated landslides through risk analysis;
10. ODF's landslide risk analysis, which ODF re-opened in response to the type D stream designation, lacks critical information about recent historic slides and debris flows in the vicinity of the logging unit that should have been considered when assigning risk categories to downstream properties;
11. The Oregon Department of Geology identifies multiple large, geologically recent debris fans at the base of this logging unit extending far beyond houses;
12. In a phone conference 23 February 2022, the ODF geotech Mike Buren acknowledged that he designated Spring Branch Canyon a low risk without physically viewing it, and that he had no information on recent slides from any part of the unit or surrounding areas - information critical to the analysis. Buren was also unaware of the domestic use of the stream;
13. Spring Branch and other streams in the unit have produced recent slides. Stimson Lumber and the previous owner were aware of at least some of these slides as they have repaired damage they caused to roads and property;
14. When Buren ultimately visited the site, along with neighbors Alan Bonebrake, Larry Lund and myself as well as Stimson and ODF staff, Buren measured the 1996 debris flow extending 450 feet beyond the canyon mouth, threatening both the Lund home and its water system. This debris flow occurred in 1996, when the entire basin was thickly covered in timber, prior to any recent logging;
15. During this meeting, neighbors recounted other recent and historic slides, including information on a slide after the mountain was logged that covered acres of a field in the valley, rendering it unfarmable;
16. In peer-reviewed studies (Amaranthus 1985, Ketcheson 1978, Lancaster 2003, May 2007, Baum 2011, Goetz 2014), logging in western Oregon has consistently been linked to increasing frequency and size of landslides and debris flows. Despite new information on slides, and the

likelihood that logging would increase size of debris flows on Spring Branch, ODF has declined to make any revisions to its geotechnical analysis of this logging unit, allowing continued logging of unstable slopes that threaten protected resources;

17. Despite overwhelming scientific evidence, ODF staff, including Mike Cafferata (Forest Grove) and Steve Truesdell (Roseburg) have minimized the role of logging in accelerating rates and severity of landslides, and both these staff members have chosen to place fault on citizens whose houses lie at the foot of mountain slopes. Cafferata voiced regret that the Lund's and other houses were present near the mountain, and cautioned that slides happen with and without logging. In response to a fatal slide in Douglas County in 1996 initiating in a Champion clearcut, Truesdell stated "Those people that died, I'm sorry for them. They were just totally stupid to put their house at the bottom of a draw;"
18. None of the downslope property owners was contacted by ODF or Stimson to inform them of the risks being taken to their detriment, to get their permission for analyzing their properties or to ask them for information, including the domestic water use of Spring Branch, that would have been critical to even a cursory resource analysis;
19. The FERNS public notification system failed to facilitate critical communications about the protection of lives, properties and water resources with affected landowners, some of whom are elderly and all of whom live in remote rural areas.

We have presented information that, again, ODF and Stimson knew or should have known about both water rights and slope stability concerns. These failures and omissions by ODF and Stimson provide ample reason for the State Forester to require Stimson to halt activities in order to provide sufficient time for review and necessary logging unit revisions. The written plan submitted on March 2 is deficient and Stimson should be required to re-submit a plan that takes account of the above mentioned factors and sufficiently addresses loggings impacts on Spring Branch, a Type D stream.

JACOBS Eric D * ODF

From: llchinook@aol.com
Sent: Wednesday, March 16, 2022 7:03 PM
To: JACOBS Eric D * ODF; CAFFERATA Mike J * ODF; george@schollsvalley.com
Subject: Logging in Spring Branch Canyon above Lund's house

Follow Up Flag: Follow up
Flag Status: Flagged

Eric

I have continued to struggle with FERNS. I spent over an hour at George Kral's house trying to submit my comments to FERNS with no luck. I am left with no choice other than emailing my comments to you so that they can be timely made a part of the record. Thanks for walking me through it but when it came time to submit, it would not accept it.

My family home and our water source come from Spring Branch. Our water right is 100 years old and is confirmed by the Water Master. Quality of water in our creek is important to us. I am concerned that Stimson started logging the bottom of the draw above our property and now there are no trees on a large section of the stream. I am also concerned that continued logging upstream from this point will cause more damage to the stream and contribute to landslides that could harm my water and family. We met with the geotech to provide history of slides and concerns for water and property. ODF has rules (Tech Note 2) that are supposed to protect private property and resources. I do not think the risk analysis done on our property reflects real threats. My stream has a slope 3 times steeper than the stream that ODF said was safe to log and then a debris flow took out the town of Woodson. When Weyerhaeuser logged, they knew I had a water right and left big buffers along the stream.

Respectfully,

Larry Lund

JACOBS Eric D * ODF

From: George Kral <george@schollsvalley.com>
Sent: Wednesday, March 16, 2022 10:07 PM
To: JACOBS Eric D * ODF
Cc: CAFFERATA Mike J * ODF; PERKINS Eric * ODF; SWEENEY David; llchinook@aol.com; GRAY Scott; MUKUMOTO Cal T * ODF; BUREN Michael R * ODF; Alan Bonebrake; Laurie Lundy; Timothy J. Bernasek
Subject: Re: Comments on NORDGREN small D plan

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Eric

In response to Larry's comments, I'd like to add to my comments and elaborate on the Woodson slide that he mentions. This slide initiated in an OSU clearcut, and while there are key differences (plugged culvert and midslope ponding), it is worth noting that Spring Branch, from top of NordgrenHL to Larry's house, is more than 3 times steeper than Woodson, which wiped out several houses. Other damaging events which were simple, shallow landslides and resulting debris flows, occurred in basins comparable to Spring Branch/Nordgren. The Nordgren unit is steeper than these other notable slides, including some that ODF has investigated. Here are some stats:

Slide	Basin Elevation Drop	Basin Length	Avg Basin Slope
Dodson	1860	5200	36%
Woodson	1330	10200	13%
Rock Creek	2900	8700	33%
NordgrenHL	1315	3600	37%

In addition, basin shape, drainage linearity, maximum slope, and historic debris flows provide evidence of overall basin debris flow hazard. In every regard, Spring Branch represents a serious hazard to downslope property. To review, the upper canyon is concave with multiple confluent headwalls and scarps. During this past winter in a 2-year rain event, a new scarp and debris flow formed in Stimson's last clearcut in the western part of the upper basin and could easily become much larger in a 100-year event. The new logging unit is even steeper and contains multiple headwalls and the main channel is nearly dead straight and pointed at downstream properties. Historic flows from this canyon form a broad fan that covers most of the Lund and Bonebrake properties and part of one of our fields. The large flows necessary to create this fan are almost certainly events precipitated by rare storm events after logging or wildfire, because that is when big slides are most likely to happen. Everyone knows this to be true. One such event would certainly compromise the domestic water use of the stream for a considerable time.

Rare events are only rare in short time frames. The chance of a 100-year event occurring over the first decade after logging is 10%. In 25 years, which is the period of time required to reduce landslide risk to near pre-harvest levels, the chance is 25% - no longer a rare event. Even a thousand-year event becomes plausible in 10 or 25 years (1 to 2.5% chance). These are not odds I would want to bet my house and water system on if upslope logging has also increased the size of a potential flow.

I have to say that it is astounding to me that ODF would conclude that NordgrenHL presents a minimal risk to properties below Spring Branch. How quickly we all seem to forget, especially when money is involved. Just 13 years ago, Mike Cafferata was Policy Chief at ODF. After the Woodson slide, the Oregonian reported the following:

- A separate administrative review by the Oregon Department of Forestry, almost finished, has found that when reviewing the OSU logging the state should have better recognized the history of landslides in the area and the homes in danger below.

"Clearly we didn't capture that - our tools weren't strong enough," said Mike Cafferata, policy unit manager at the Department of Forestry. "

Apparently they are still not strong enough. Please incorporate this email into my official comments on NordgrenHL.

Thank you,
-George

George Kral, Ph.D.
Forester & Botanist
Scholls Valley Native Nursery LLC

george@schollsvalley.com
https://www.schollsvalley.com/
4036 NW Half Mile Ln, Forest Grove, OR 97116

On Wednesday, March 16, 2022, 06:02:25 PM PDT, George Kral <george@schollsvalley.com> wrote:

Hi Eric

My comments are attached.

Thank you,
-George

George Kral, Ph.D.
Forester & Botanist
Scholls Valley Native Nursery LLC

george@schollsvalley.com
https://www.schollsvalley.com/
4036 NW Half Mile Ln, Forest Grove, OR 97116

JACOBS Eric D * ODF

From: CONSTANS Jake W * WRD
Sent: Wednesday, March 23, 2022 9:44 PM
To: JACOBS Eric D * ODF
Cc: lkchinook@aol.com
Subject: RE: Domestic Point of Diversion Location Cert 7627

Follow Up Flag: Follow up
Flag Status: Completed

Hi Eric,

Not sure if you were in the background of the call I had earlier with Mike, the ODF Forester, but after being presented more information and taking another look I have a different opinion than what I originally determined the POD location to be.

Logically it makes sense for the POD location to be where it is currently being appropriated from; on the Spring Branch tributary of Gales Creek. This Spring Branch is noted on the permit map, which is the only water right map we have available to go on (S-6853). The original confusion of the POD location stemmed from the scale on the permit map (1in = 10 chains) potentially locating the spring further northwest of its actual location on Spring Branch.

We are working with permit maps, not a certificated final proof survey, that are nearing 100 years old. Discrepancies can happen with permit maps and we have to consider the available information as a whole. Besides the map's scale issue, all of the available documentation points to the POD being at its current location.

Here are some notes supporting this new finding:

- All historical evidence of water use has been diverted from this current POD location
- Based on aerial photos and statements from the landowner, my original POD location estimate would likely not have the ability to provide an adequate water source
- Current POD location is listed on the permit as Spring Branch and the permit map displays the POD directly on Spring Branch tributary.
- The shape of Spring Branch on the permit map matches up very well with the current tributary's shape it is being diverted from.
- There are also notes on the permit stating the pipe length of 400ft with a fall of 70ft. Having a fall of 70ft would not be practical if this 400ft pipeline were to be located at my initial POD estimate being northwest of the Spring Branch tributary and within a field of limited elevation gain. This 70ft fall would be much more practical in elevation change if the documented 400ft pipeline were to be located between the current home area and where it is currently being diverted from on Spring Branch.

Therefore with the information I have available, my best interpretation of the official permitted POD location is on Spring Branch (eastern stream) where it has historically been diverted from and where you took your GPS coordinates; south of the home on tax lot 500.

Let me know if you have any questions, this has been a unique situation for sure.

Thank you,

Jake Constans
Watermaster, District 18

Oregon Water Resources Department
1400 SW Walnut Street, Suite 240
Hillsboro, OR 97123
Office: (503) 846-7780 Cell: (971) 266-7802
Jake.W.Constans@oregon.gov

From: JACOBS Eric D * ODF <Eric.D.JACOBS@odf.oregon.gov>
Sent: Friday, March 18, 2022 9:31 AM
To: CONSTANS Jake W * WRD <Jake.W.CONSTANS@water.oregon.gov>
Cc: Cameron Greenwood <Cameron_Greenwood@co.washington.or.us>
Subject: RE: Domestic Point of Diversion Location Cert 7627

Hi Jake,
It was good catching up with you the other day. Thanks for diving into this and also for forwarding the email with the breakdown. This is definitely farther along than I could have ever even tried to get on my own. I really appreciate the time you and everyone else have put in to help us to sort out this question.

Knowing that the landowner could hire a surveyor, the led me to a follow-up question. What would be the process for the landowner if they wanted to request a new water right certificate for the eastern stream channel? Would that even be possible? With this information we have determined that, without an authorized POD in the eastern stream, ODF does not have the authority to protect that stream. Just hoping to figure out a little more to best help this landowner out, given the circumstances.

If you could, let me know your thoughts on those two questions.
Thanks again!

Eric Jacobs
Stewardship Forester
Forest Grove District
Oregon Department of Forestry
Office: 503-359-7439
Cell: 971-701-3649

From: CONSTANS Jake W * WRD <Jake.W.CONSTANS@water.oregon.gov>
Sent: Wednesday, March 16, 2022 3:23 PM
To: JACOBS Eric D * ODF <Eric.D.JACOBS@odf.oregon.gov>
Cc: Cameron Greenwood <Cameron_Greenwood@co.washington.or.us>
Subject: FW: Domestic Point of Diversion Location Cert 7627

Hi Eric,

Thanks for catching for catching up with me earlier about this POD question. Below is an email thread between my direct manager, Mike, and regional assistant watermaster with a heavy water right background, Jeana.

Jeana's feedback is the bulk of the thread and goes into a heavier analysis of the property boundary evolution and other information we could gather from what we have available; tax lot maps, water right certificate, permit, etc.. My estimate of the POD location is an aerial view photo with a green icon and located at the bottom of this forwarded email thread. Jeana and I both came up with a similar authorized POD location which would place it on tax lot 300, not on what is now Stimson property.

I want to emphasize that this is our best estimate, not necessarily set in stone, as to where the authorized point of diversion is for this water right. The landowner is perfectly fine to hire a surveyor if they would like to dispute our findings.

Please let me know if you have any further questions.

Thanks,

Jake Constans
Watermaster, District 18
Oregon Water Resources Department
1400 SW Walnut Street, Suite 240
Hillsboro, OR 97123
Office: (503) 846-7780 Cell: (971) 266-7802
Jake.W.Constans@oregon.gov

From: MCCORD Mike L * WRD <Mike.L.MCCORD@water.oregon.gov>
Sent: Monday, March 14, 2022 1:40 PM
To: EASTMAN Jeana M * WRD <Jeana.M.EASTMAN@water.oregon.gov>; CONSTANS Jake W * WRD <Jake.W.CONSTANS@water.oregon.gov>
Subject: RE: Domestic Point of Diversion Location Cert 7627

Thanks Jeana, your logic makes sense to me. Lets make our call based on what you and Jake have found. If anyone disagrees we can provide them with a copy of the file and they are free to hire a surveyor if they want to dispute this.

Mike McCord
NW Region Manager
725 Summer St. NE, Suite A, Salem, Oregon 97301 | Phone: 503-559-9347

OREGON WATER RESOURCES DEPARTMENT

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From: EASTMAN Jeana M * WRD <Jeana.M.EASTMAN@water.oregon.gov>
Sent: Monday, March 14, 2022 1:24 PM
To: CONSTANS Jake W * WRD <Jake.W.CONSTANS@water.oregon.gov>; MCCORD Mike L * WRD <Mike.L.MCCORD@water.oregon.gov>
Subject: RE: Domestic Point of Diversion Location Cert 7627

Jake / Mike –

The POD location that Jake estimated is likely the authorized POD.

There are two waterways on the USGS layer and I was unsure which was the source. At first, I thought the "eastern waterway" was the source, as it flows through the SE corner of the property, south of the house, just like the permit map shows. But as I compared the property boundary and the DLC corners, I suspect the original house that was there in 1926 was replaced, and the house built in 1967 (per Wash Co Assessor) was built further south, which changed the orientation of the house to the POD. Now I think the POD is on the "western waterway". (images below)

What further complicated it was that the permit map misidentified the location of the DLC line so I believed both the POD/POU would be shifted as a result. I'm still not 100% confident, and that's why I'm saying Jake is *likely* correct. It sounds as though you printed to the map to scale, 1" = 660 ft, so that increases my confidence level.

Here are my notes, for what they're worth.

"eastern waterway" - red arrow, originally I thought this was the source (Green/white marker is house)

"western waterway" - purple arrow, I agree with Jake that this is likely the authorized source. (Green/white marker is house)

Property boundaries have changed since the permit map but we can identify locations by comparing the permit map and the GIS layers. My best guess of the original property is outlined in lime green. Compare the two images below, which identify the NW corner of the original property, the SE corner of the original property, and two corners of DLC 49. So if the original house was on the southern line of NENW as identified by the permit map, and the POD were approx. 400 south (per the application), it appears the POD/POU would be on what is now Tax Lot 300.

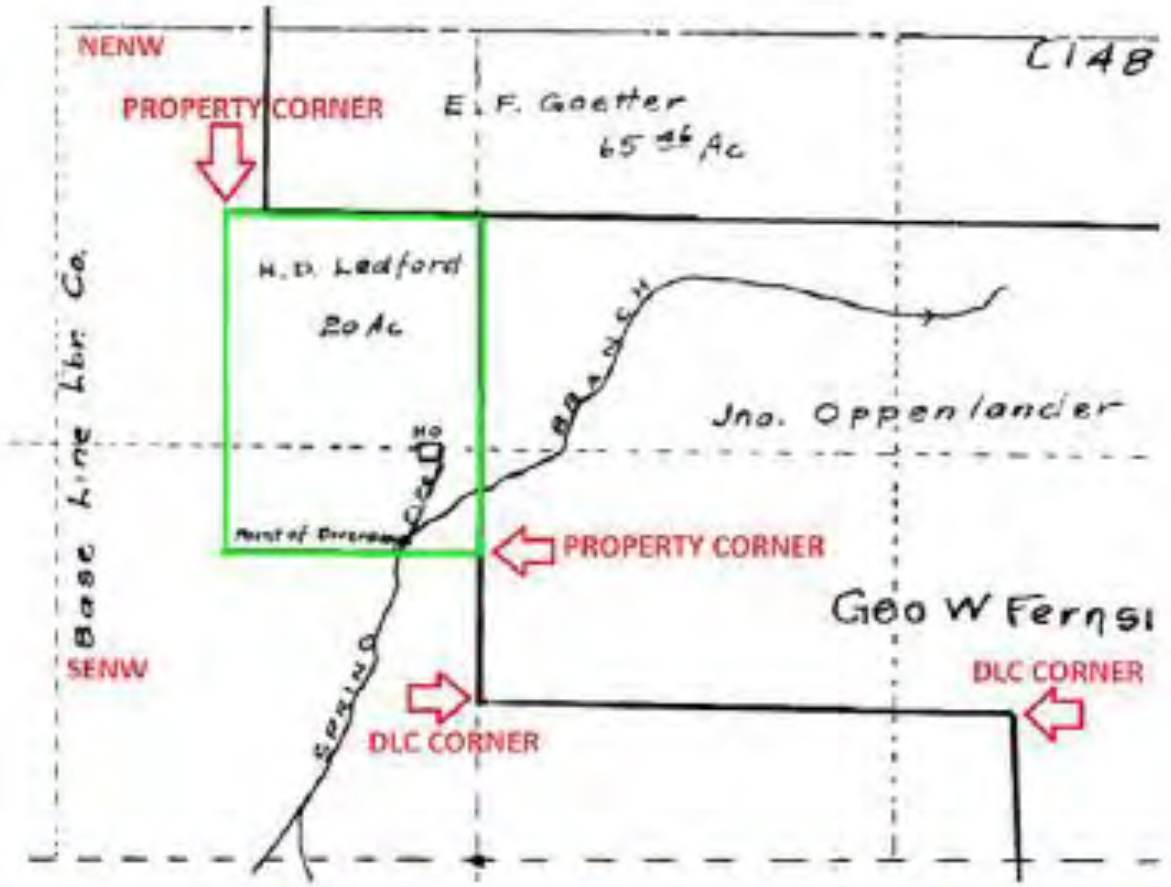


Exhibit A26
Page 6 of 8

My guess of the original house location to the waterway to the SW is approx. 320 feet.

Application, pipe is 400 feet

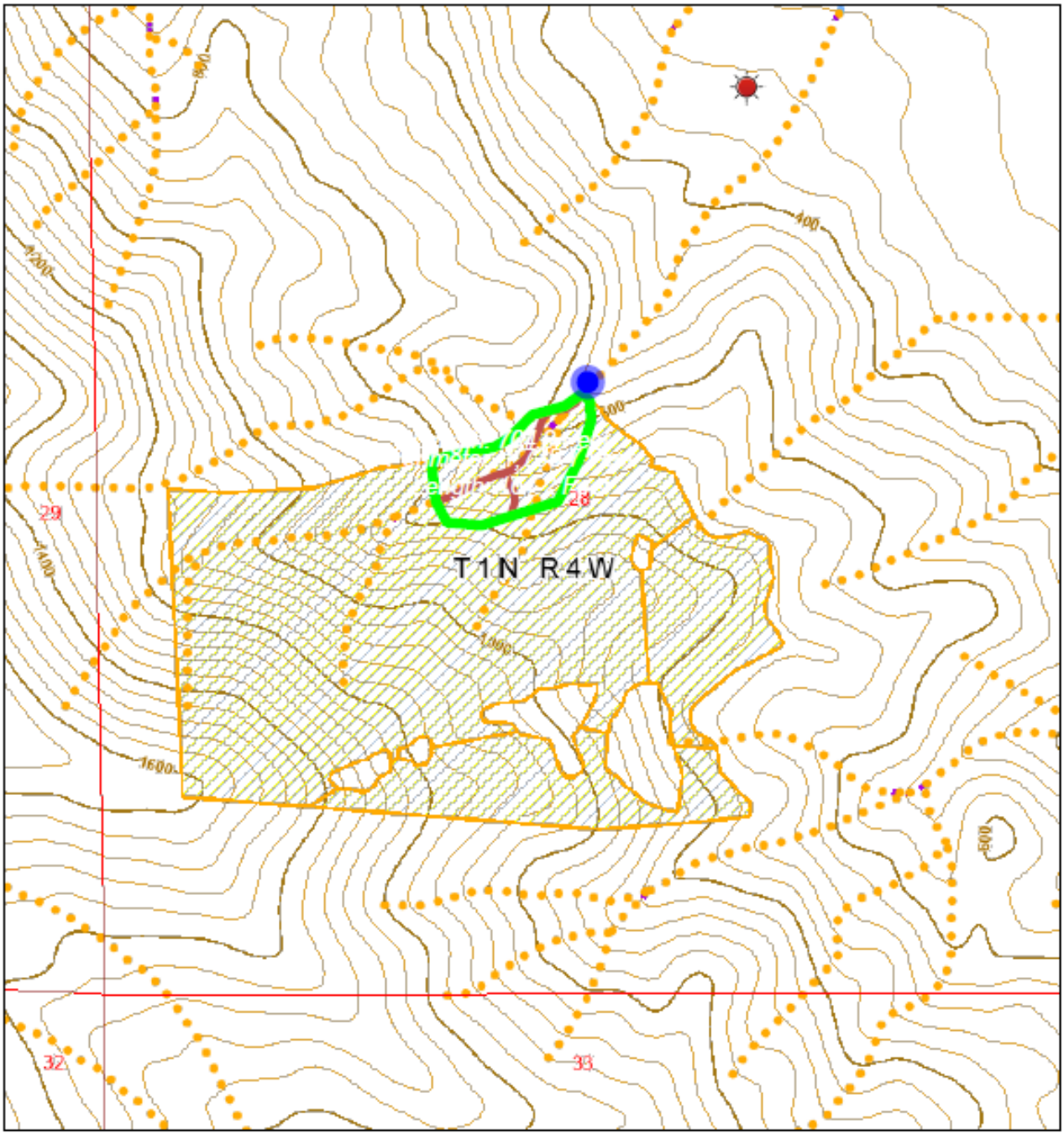
5. The pipe line to be 400 feet
(Main ditch, canal or pipe line)
in length, terminating in the SW¼ of the NW¼ of Sec. 26, Tp.

Jake's estimation of the authorized POD, which looks good to me.

Jeana Eastman, NW Region Assistant Watermaster, 503.428.8297
Oregon Water Resources, 725 Summer St NE, Ste A, Salem OR 97301

Plans to protect air and water, wilderness and wildlife are in fact plans to protect man. - Stewart L. Udall

Reference Area



2/24/2022, 12:21:12 PM

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

Sections

Township Range

HLHL Screen 2019

60%+ Screen (non HLHL)

HLHL Draws

HLHL

Fish Presence

Fish, Small

Nonfish, Small

High Aquatic Potential Streams

FERNS NOAP Polygons

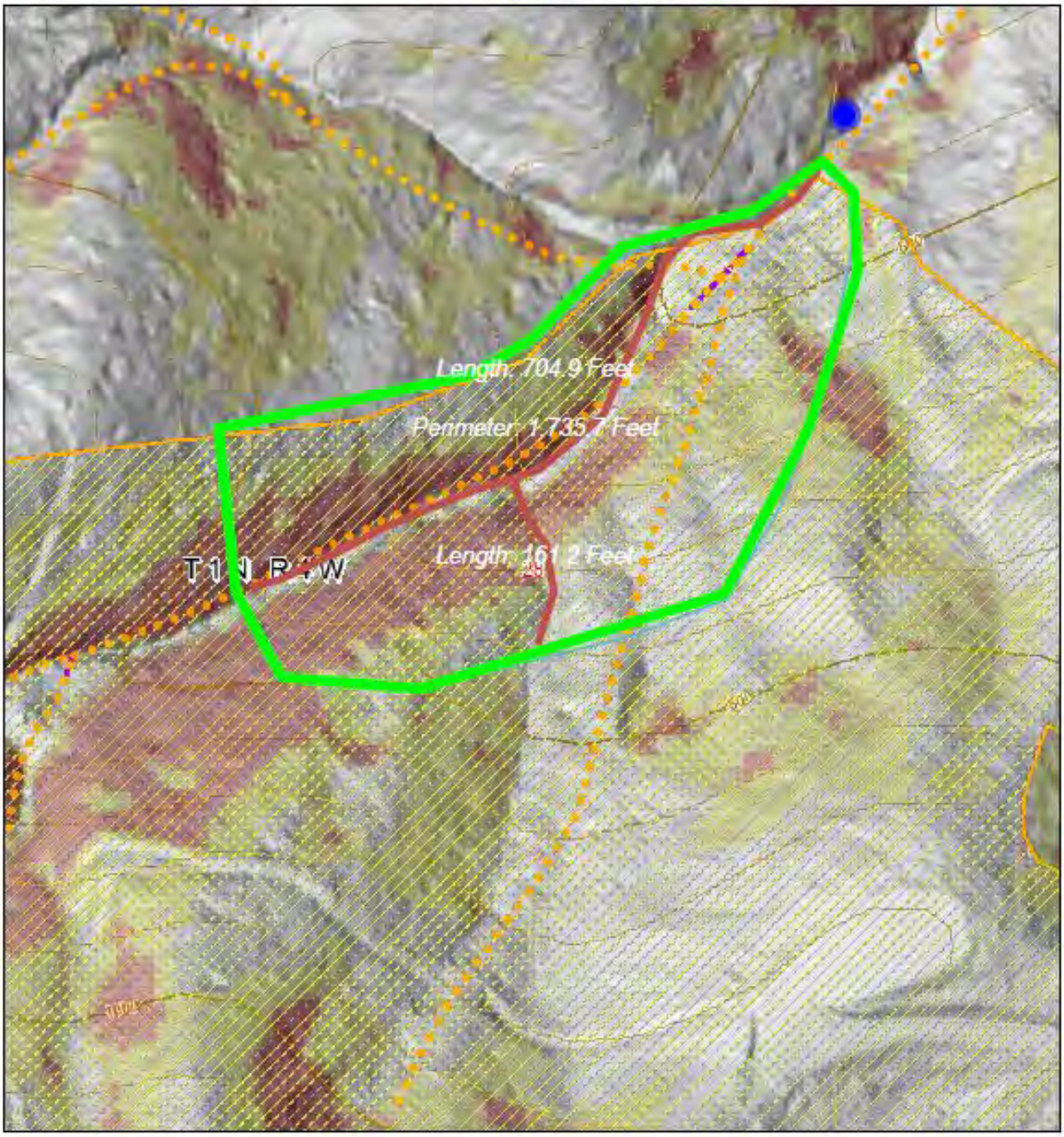
All Other Activities

Oregon Department of Forestry, ODF, Maxar

ArcGIS Web AppBuilder

ODF | Oregon Department of Forestry | ODF GIS | National Weather Service | ODF GIS UNIT | USFS and ODF Private Forests Program | Maxar |

Cut Area along type D w/ HLHL



2/24/2022, 12:18:01 PM

1:2,257

0 0.01 0.03 0.05 mi

0 0.02 0.04 0.08 km

Sections
Township Range
HLHL Screen 2019
60%+ Screen (non HLHL)
HLHL Draws
HLHL
Fish Presence
Nonfish, Small
High Aquatic Potential Streams
FERNS NOAP Polygons
All Other Activities
Contours 40 feet Statewide
Index

Maxar, Microsoft, Oregon Department of Forestry, ODF

ArcGIS Web AppBuilder

ODF | Oregon Department of Forestry | ODF GIS | National Weather Service | ODF GIS UNIT | USFS and ODF Private Forests Program | Maxar, Microsoft |

Related Document: "*Small D and Alt Plan Nordgren with map*"
NOAP #: 2022-531-01917

Per ORS 527.674, ODF is not authorized to approve (statutory) written plans. Per OAR 629-642-0700, ODF may approve Plans for Alternate Practices.

Statutory Written Plan:

After reviewing your Statutory Written Plan and the public comments that were provided within the required 14-day comment period, I offer you the following comments: Fully implementing this written plan will likely achieve the resource protection standards of Forest Practices Act. This operation will be evaluated on the basis of how well required resource protection is achieved.

Plan for Alternate Practice

ODF: ERIC JACOBS _____ _____ 3/23/22
print signature date

Approved? X **Yes** ___ **No** **Date** 3/23/22

Fully implementing this Plan for an Alternate Practice will likely achieve the FPA resource protection standards. The operation will be evaluated on the basis of how well this approved Plan for an Alternate Practice is implemented and how well required resource protection is achieved.

Comments:
ODF approval of a PFAP to modify OAR 629-642-0400(2) Retain all trees within 20 feet of Type D stream, as authorized by OAR 629-642-0700(1), is based on ODF not informing the landowner/operator of the protected domestic Type D stream prior to commencement of the operation. Also, the landowner has committed to leave tree buffers of 1,140 linear feet and 20-90 feet width on 3 tributaries in addition to the main channel of the 810 linear feet of impacted Type D stream. Buffering the tributaries exceeds the forest practices requirements.

Removal of trees within the RMA/stream channel of the impacted RMA would meet ODF Geotech recommendation to mitigate wood loading that is currently capable of being captured in a debris torrent event that could create destructive risk to the RMA and areas downstream. Also, downed trees within the RMA pose a safety risk to operators when working in the RMA to remove slash and other debris, as required. Removal of felled trees will meet the basis of these recommendations while further restoring the impacted RMA in a timelier manner through reforestation.

From: CAFFERATA Mike J * ODF
To: WAGENBLAST Greg * ODF
Subject: FW: Request for hearing
Date: Monday, April 04, 2022 4:26:59 PM
Attachments: NordgrenHLrequest.docx
Small D and Alt Plan Nordgren with map.pdf
225D846439334BC2B0F3FAF286756E8F.gif
3F9F94F4D54D4D53851869863640C101.png
83DBA249913548DA9CE8FA3441376741.png
AB76F46CA206400A81605835CAD95460.gif

Mike Cafferata
Forest Grove District Forester
Oregon Department of Forestry
Work (503) 359-7430
Cell (503) 961-2022

From: George Kral <george@schollsvalley.com>
Sent: Friday, April 01, 2022 10:52 AM
To: SWEENEY David <dsweeney@stimsonlumber.com>; GRAY Scott <sgray@stimsonlumber.com>
Cc: CAFFERATA Mike J * ODF <Mike.J.CAFFERATA@odf.oregon.gov>
Subject: Request for hearing

Hi Dave and Scott

Please see attached request for hearing. I will be contacting your operator, Bighorn logging, today or early next week. I would like to find a way to work together toward positive outcomes on this project and I'm open to conversation if that is of interest to you as well. The main item I have asked for all along is time.

Best regards,
-George

George Kral, Ph.D.
Forester & Botanist
Scholls Valley Native Nursery LLC

george@schollsvalley.com
https://www.schollsvalley.com/


4036 NW Half Mile Ln, Forest Grove, OR 97116

A Request for Hearing to the Oregon Board of Forestry, per ORS 527.700

Re: Nordgren HL, a logging unit on Stimson Lumber land in Washington County

1-April-2022

STATEMENT OF INTEREST (ORS 527.700 5c)

My name is George Kral. I am a forester and have been working in this field for 35 years. The Nordgren HL logging unit lies on the northeastern flank of Gales Peak, a third of a mile southwest of our farm. The canyons and slopes on this side of Gales Peak have a long history of slides, mapped by the Oregon Department of Geology, which have affected our property. Logging is scientifically well-established as a causal agent in increasing the frequency and severity of landslides and debris flows. Nordgren HL specifically poses significant added risks of debris flows that could affect downslope roads, streams, and neighbors, including our farm.

In the process of reviewing a statutory plan for a small type D stream (Spring Branch), the Oregon Department of Forestry has analyzed geological hazards and water resources potentially impacted by logging, and provided these analyses to Stimson in support of Stimson's Nordgren HL logging operation. Given the seriousness of potential impacts, ODF's analyses have been cursory and faulty. ODF overlooked an established domestic water right directly affected by the operation, and in following up after the fact with geological analysis, has failed to apply its own guidance, well-established science and ODF's own direct experience. This experience encompasses a long history of logging-related slides that have cost hundreds of millions of dollars and the lives and homes of many Oregonians.

With Nordgren HL specifically, in addressing landslide hazards and the impacts of the operation to the type D stream, the state has made two claims that are contradictory: 1) that large debris flows capable of causing damage to downstream homes and properties are so unlikely that no modifications to forest practices within Spring Branch canyon are necessary; and 2) that logs erroneously cut out of the buffer or inadvertantly felled into the stream should be yarded out of the stream, "to mitigate wood loading that is currently capable of being captured in a debris torrent event that could create destructive risk to the RMA and areas downstream." Our family farm is downstream of this operation, as are our neighbors.

As an affected landowner, I respectfully ask the Board for the following:

1. To hear this matter as expeditiously as possible as this operation is ongoing;

2. To rescind the existing geotechnical analysis and findings and require Stimson Lumber to delay further operations, allowing time for additional analysis;

3. To require ODF to commission a third-party geologist who is mutually agreeable to ODF and downslope neighbors to thoroughly analyze Spring Branch canyon and downslope properties, and to prepare a report detailing geologic hazards, the potential effects of proposed logging, and reasonable and customary mitigation;

4. To require Stimson Lumber to implement all recommendations of the geologist's report prior to additional felling and yarding activities;

5. To improve the accountability of ODF by clarifying the responsible party in the event of oversights, errors and omissions in compliance with the FPA. In this case, a type D stream has been adversely affected, yet ODF insists that the FPA has been followed. Is ODF or the landowner responsible for damage to resources in the event that either or both parties fail in due diligence?

I wish to state again for the record that I am not against logging and am an advocate for sound forest management. I also wish to state that I do not fault any single person involved in this project, either at ODF or at Stimson Lumber. I do challenge a public system that seems to favor short-term private interests, and in which ODF staff do not have sufficient time or resources to adequately analyze potentially life-threatening situations.

STATEMENT OF FACT (ORS 527.700 5d)

Nordgren HL occurs within 100 feet of Spring Branch, a small type D stream.

COMMENTS (ORS 527.700 5b)

Comment posted to FERNS 16_Mar-2022

The new plan is not adequate to address water quality and slope stability concerns for many reasons. I am sending detailed comments in an email to Stimson and ODF. Thank you -George Kral

Comment submitted via email 16-Mar-2022

In September 2021, I inquired at Stimson Lumber and the Forest Grove ODF office about a marked logging unit in Spring Branch Canyon on Gales Peak, which lies to the west of our farm. The area of remaining timber that was marked for logging is on the steepest and most unstable ground on the peak, with a history of generating slides that have affected downslope properties, including ours, according to slide mapping by the Oregon Department of Geology and recent neighborhood history. I was told by ODF staff that no logging notification had been submitted. I was directed to access information through FERNS (ODF's automated notification and de facto public information system), which I did, and to contact Stimson, which I had already done. Neither line of inquiry yielded any information.

On the morning of February 15, after hearing a felling crew working in the canyon, I contacted ODF staff and Stimson to ask what was going on and to reiterate that I thought logging this unit is a bad idea, given slope steepness, recent history of slides and domestic water use of the creek. ODF staff informed me that the water right was not in the canyon, but ODF was incorrect. The domestic water right is in the stream immediately below the current logging activity. Furthermore, the stream was previously designated a class D stream, presumably by ODF, as indicated on a 2002 Weyerhaeuser logging plan. A review of facts relevant to the resources in this written plan:

1. Both ODF and Stimson were aware, or should have been aware, of the water right on Spring Branch prior to the inception of this operation;
2. When I notified both ODF and Stimson of the water right, ODF refused to believe that the water right existed in this location and permitted Stimson to continue logging the unit for four days without any modifications;
3. By the time ODF finally asked Stimson to halt felling in the canyon, approximately 6 acres at the bottom of the canyon had already been felled, exposing hundreds of feet of the stream with extremely steep, fragile banks;
4. No buffer at all was left on this Class D stream as required by the FPA;
5. No written plan was prepared as required by the FPA;

6. A written plan submitted on 2 March 2022, after the logging operation was well underway, fails to address damage already done to the stream;
7. Narrow buffers proposed in the revised plan do not adequately address the extreme instability of slopes above the protected streams;
8. Basins of similar steepness and geology, both with and without buffers, are known by ODF to have experienced catastrophic failures of a nature that, in Spring Branch, would disrupt domestic water use and threaten downslope lives and properties;
9. ODF's landslide risk analysis, which ODF re-opened in response to the type D designation, lacks critical information that should have been considered when assigning risk categories to downstream properties and resources, including domestic water use;
10. In a phone conference 23 February 2022, the ODF geotech Mike Buren acknowledged that he designated Spring Branch Canyon a low risk without physically visiting this portion of the unit. The geotech also acknowledged that he had no information on recent slides from any part of the unit or surrounding areas - information critical to the analysis. In the original analysis, Mr. Buren was also unaware of the domestic use of the stream and therefore did not accomodate this resource value in his analysis;
11. Spring Branch and every other stream coming off this face of Gales Peak has a history of slides, some of the biggest of which have been associated with past logging;
12. Stimson Lumber and the previous owner were aware of at least some of these slides as they have repaired damage these slides have caused to roads and property;
13. When Mr. Buren ultimately visited the site, along with neighbors Alan Bonebrake, Larry Lund and myself as well as Stimson and ODF staff, Buren measured a 450-foot runout of a 1996 debris flow on Spring Branch that threatened both the Lund home and its water system;
14. This debris flow occurred in 1996, when the entire Spring Branch basin was thickly covered in timber, prior to any recent logging;
15. In peer-reviewed studies, logging has consistently been linked to increasing number, size and severity of landslides and subsequent debris flows. Despite new information on slides and slope stability, and the likelihood that logging would increase subsequent landslides and debris flows on Spring Branch, ODF has declined to make any revisions to its geotechnical analysis of this logging unit, allowing continued logging of unstable slopes that threaten protected resources;
16. ODF staff, including Mike Cafferata (Forest Grove) and Steve Truesdell (Roseburg) have consistently diminished and ignored the role of logging in accelerating rates and severity of landslides, and both these staff members have chosen to place fault on citizens whose houses lie at the foot of mountain slopes;
17. Not one of the downslope property owners was contacted by ODF or Stimson to inform them of the risks being taken to their detriment, to get their permission for analyzing their properties or to ask them for information, including the domestic water use of Spring Branch, that would have been critical to even a cursory geo-hazard analysis;
18. The FERNS public notification system failed to facilitate critical communications about the protection of lives, properties and water resources with affected landowners, some of whom are elderly and all of whom live in remote rural areas.

This logging operation is entirely contained within a single unit and it is out of compliance with the FPA. We have presented information that, again, ODF and Stimson knew or should have known about both water rights and slope stability concerns. These failures and omissions by both ODF and Stimson provide ample reason for the State Forester to require Stimson to halt activities in order to provide sufficient time for review and necessary logging unit revisions.

Follow-up comment submitted via email 16-Mar-2022:

Hi Eric

In response to Larry's comments, I'd like to add to my comments and elaborate on the Woodson slide that he mentions. This slide initiated in an OSU clearcut, and while there are key differences (plugged culvert and midslope ponding), it is worth noting that Spring Branch, from top of NordgrenHL to Larry's house, is more than 3 times steeper than Woodson, which wiped out several houses. Other damaging events which were simple, shallow landslides and resulting debris flows, occurred in basins comparable to Spring Branch/Nordgren. The Nordgren unit is steeper than these other notable slides, including some that ODF has investigated. Here are some stats:

Slide	Basin Elevation Drop	Basin Length	Avg Basin Slope
Dodson	1860	5200	36%
Woodson	1330	10200	13%
Rock Creek	2900	8700	33%
NordgrenHL	**1315**	**3600**	**37%**

In addition, basin shape, drainage linearity, maximum slope, and historic debris flows provide evidence of overall basin debris flow hazard. In every regard, Spring Branch represents a serious hazard to downslope property. To review, the upper canyon is concave with multiple confluent headwalls and scarps. During this past winter in a 2-year rain event, a new scarp and debris flow formed in Stimson's last clearcut in the western part of the upper basin and could easily become much larger in a 100-year event. The new logging unit is even steeper and contains multiple headwalls and the main channel is nearly dead straight and pointed at downstream properties. Historic flows from this canyon form a broad fan that covers most of the Lund and Bonebrake properties and part of one of our fields. The large flows necessary to create this fan are almost certainly events precipitated by rare storm events after logging or wildfire, because that is when big slides are most likely to happen. Everyone knows this to be true. One such event would certainly compromise the domestic water use of the stream for a considerable time.

Rare events are only rare in short time frames. The chance of a 100-year event occurring over the first decade after logging is 10%. In 25 years, which is the period of time required to reduce landslide risk to near pre-harvest levels, the chance is 25% - no longer a rare event. Even a thousand-year event becomes plausible in 10 or 25 years (1 to 2.5% chance). These are not odds I would want to bet my house and water system on if upslope logging has also increased the size of a potential flow.

I have to say that it is astounding to me that ODF would conclude that NordgrenHL presents a minimal risk to properties below Spring Branch. How quickly we all seem to forget, especially when money is involved. Just 13 years ago, Mike Cafferata was Policy Chief at ODF. After the Woodson slide, the Oregonian reported the following:

- A separate administrative review by the Oregon Department of Forestry, almost finished, has found that when reviewing the OSU logging the state should have better recognized the history of landslides in the area and the homes in danger below.

"Clearly we didn't capture that - our tools weren't strong enough," said Mike Cafferata, policy unit manager at the Department of Forestry. "

Apparently they are still not strong enough. Please incorporate this email into my official comments on NordgrenHL.

Thank you,
-George

Comment submitted via email 22-Mar-2022 (within comment period for response to public comments as prescribed in FERNS)

Hi Eric

I have had some time now to go over my notes and fact-check some more items. I also received the Rock Creek slide evaluation by Squier Associates which I will be reading in detail. If anyone would like a copy of this document, you should be able to access it here:

https://cloud.odf.state.or.us/portal/s/18242435780150539472O.pdf

I understand that the comment period for the written plan has ended, but wanted to make a couple of corrections and additions to my own comments. First, folks are generally using the term "one-percent annual exceedance probability" (AEP) instead of 100-year event. Probability theory requires that not every 100-year interval encompasses a single one-percent AEP event. Some have none, some have more than one. Therefore, the chance of one or more one-percent AEP events in 100 years is not 100%. By the same token, the chance of one or more one-percent exceedance events in ten years is slightly less than ten percent. Nevertheless, as I stated before, over longer time frames, these kinds of rare events are no longer rare, but expected to occur at much higher probabilities. Just as importantly, one-percent AEP events may occur back-to-back in a single year, creating a new and more impactful class of super-events.

I also wanted to share some additional data on debris flows (attached). This data refines and corrects some of the figures in my previous comment, including a transcriptional error on the Dodson slide. The slope figures I reported originally are accurate and remain largely unchanged. Nordgren HL remains the steepest of the flow events that I have had time to sample. I also added some additional metrics that are relevant to Nordgren.

I will be continuing to review the Squier study and other slide data, public safety legislation, FPA background including Type D protections and the legislative intent behind FPA and its constituent parts. Please let me know if you have any questions.

Best regards,
-George

Attachment to 22-Mar-2022 comments:

Slide	Basin Elev Drop	Basin length	Avg Basin Slope	Lower 50% elev drop	upper 50% slope	Lower 50% slope	Post-LOC runout slope	Post-LOC runout distance	Post LOC % of basin	Terminal blockage
Dodson	3846	10960	35%	800	56%	15%	15%	5700	52%	Columbia River
Woodson	1330	10200	13%	425	18%	8%	2%	816	8%	RR grade
Rock Creek	1890	5200	36%	517	53%	20%	31%	200	4%	right-angle confluence
NordgrenHL	1315	3600	37%	268	58%	15%	15%	550	15%	none
A	Basin elev drop		change in elevation from top of basin to terminus of debris flow (or nearest houses)							
B	Basin length		map distance from top of basin to terminus of debris flow (or nearest houses)							
C	Average basin slope		A/B							
D	Lower 50% elev drop		change in elevation of lower half of basin							
E	Upper 50% slope		slope of upper half of basin							
F	Lower 50% slope		slope of lower half of basin							
G	Post-LOC runout slope		slope of flow-path below confinement of canyon mouth (open slopes)							
H	Post-LOC runout distance		distance of flow beyon canyon mouth							
I	Post-LOC % of basin		proportion of basin represented by post-LOC flow							
J	terminal blockage		feature that diverts flows from forward progress (if any)							

Larry Lund comments submitted via email 16-Mar-2022

Eric

I have continued to struggle with FERNS. I spent over an hour at George Kral's house trying to submit my comments to FERNS with no luck. I am left with no choice other than emailing my comments to you so that they can be timely made a part of the record. Thanks for walking me through it but when it came time to submit, it would not accept it.

My family home and our water source come from Spring Branch. Our water right is 100 years old and is confirmed by the Water Master. Quality of water in our creek is important to us. I am concerned that Stimson started logging the bottom of the draw above our property and now there are no trees on a large section of the stream. I am also concerned that continued logging upstream from this point will cause more damage to the stream and contribute to landslides that could harm my water and family. We met with the geotech to provide history of slides and concerns for water and property. ODF has rules (Tech Note 2) that are supposed to protect private property and resources. I do not think the risk analysis done on our property reflects real threats. My stream has a slope 3 times steeper than the stream that ODF said was safe to log and then a debris flow took out the town of Woodson. When Weyerhaeuser logged, they knew I had a water right and left big buffers along the stream.

Respectfully,

Larry Lund

COPY OF WRITTEN PLAN (ORS 527.700 5a)

Attached separately.

Office of Administrative Hearings Referral Form

Phone: (503) 947-1637, Fax: (503) 947-1923

oed_oah_referral@oregon.gov

Referring Agency: Oregon Department of Forestry, Private Forests

Has this case been previously referred to the OAH? No

Case Information

Agency Action Date	Hearing Request Date	Referral Date
March 23, 2022	April 1, 2022	April 5, 2022
Case type/Issue(s)	**Agency Case No**	**OAH Case No**
Private Forests	NOAP 2022-531-01917	2022-ABC-05271
Alert(s)/Special Status(es)		

People

Assistant Attorney General Assistant		
Jeff Seeley	1162 Court St NE Salem OR 97301	Primary: (503) 947-4590 jeff.seeley@state.or.us
Assistant Attorney General		
Matthew B Devore	1162 Court St NE Salem OR 97301	Primary: (503) 947-4342 matt.b.devore@doj.state.or.us
Agency Contact		
Ashley Ziglinski	2600 State Street Salem OR 97310	Primary: (971) 600-8045 ashley.m.ziglinski@odf.oregon.gov
Agency Representative		
Greg Wagenblast	2600 State St Bldg D Salem OR 97310	Primary: (503) 945-7382 greg.wagenblast@oregon.gov
Bighorn Logging	13820 NW Main Street Banks OR 97106	Language: English Primary: (503) 324-2422
Stimson Lumber Company Scott Gray	49800 SW Scoggins Valley Rd Gaston OR 97119	Language: English Work: (503) 357-2131 sgray@stimsonlumber.com
Appellant		
George Kral	4036 NW Half Mile Ln Forest Grove OR 97116	Language: English Primary: (503) 260-2238 george@schollsvalley.com

Case Processing Information

Type of hearing: **In Person**
Is the hearing to be set and notice mailed by your agency? **No**
Does the Notice of Hearing require certified mailing? **Yes**
Does the agency want a prehearing conference? **Yes**
Estimated hearing length: **1 Day (2 Max)**
Does order require certified mail? **Yes**
Will the agency issue a Final Order by Default? **No**
Type of Order required: **Proposed Order**
Will the agency seek cost reimbursement? **No**
Will the agency handle any exceptions that are received? **Yes**

Documents submitted with referral

ABC Referral Packet
ABC Referral Packet
ABC Referral Packet

Additional Information

Per OAR 629-672-0210: This is a Hearings for Persons Adversely affected by an Operation for which a Written Plan is Required under ORS 527.670(3)Hearing must be held on or before April 22, 2022. Hearing required to be held within 21 days of ODF receiving the hearing required per OAR 629-672-0210Hearing location to be at ODF Forest Grove Office - Conference RoomODF will call coordinator shortly after submission to expedite the schedule. There may not be time for a Pre-Hearing conference call,

DeVore Matt B

From: WAGENBLAST Greg * ODF <Greg.WAGENBLAST@odf.oregon.gov>
Sent: Wednesday, April 6, 2022 11:25 AM
To: george@schollsvalley.com
Cc: GRAY Scott; SWEENEY David; MCKIBBIN Mike; LOGGING CORP Bighorn; CAFFERATA Mike J * ODF; DEVORE Matt B; ZIGLINSKI Ashley M * ODF; WAGENBLAST Greg * ODF
Subject: Acknowledgement of Hearings for persons adversely affected by an operation for which a written plan is required under ORS 527.670(3)
Attachments: Kral Ltr Ackn Hearing Request for WP with NOAP 2022-531-01917.pdf; OAH Referral 1160532923089132a950.pdf; 1160600806562451202204051053425mallDandAltPlanNordgrenwithmap.pdf; 1160597995862104202204051052595NordgrenHLrequest.pdf; 1160594293976313202204051052305FWRequestforhearingemail.pdf

CAUTION EXTERNAL EMAIL* This email originated from outside of DOJ. Treat attachments and links with caution. *CAUTION EXTERNAL EMAIL

Good Morning Mr. Kral,

Re: Hearings for persons adversely affected by an operation for which a written plan is required under ORS 527.670(3)

Dear Mr. Kral:

I am writing to acknowledge receipt of your request for a hearing Per ORS 527.700/OAR 629-672-0210 regarding the statutory written plan associated with Notification of Operation No. 2022-531-01917, Nordgren HL that you have provided comments on. There is a statutory time limit within which a hearing must be held, so a hearing will be scheduled for some date on or before April 22, 2022, at a location to be determined in the Pre-hearing conference call with the Administrative Law Judge. You will receive a formal notice of this hearing at a later time. Enclosed are the "Notice of Contested Case Rights and Procedures" along with the referral notice to the Office of Administrative Hearings.

Sincerely,

Greg Wagenblast
Policy Analyst/Civil Penalties Administrator
Oregon Department of Forestry
Private Forest Division
2600 State Street, Bldg D
Salem, OR 97310
Office (503)945-7382
Cell (541)525-6462
New Email: greg.wagenblast@odf.oregon.gov

Enclosures
C: Matt DeVore, Assistant Attorney General, DOJ
Mike Cafferata, District Forester, ODF Forest Grove District

Stimson Lumber Company
Bighorn Logging Corp.
Case Files

Oregon
Kate Brown, Governor

Department of Forestry
State Forester's Office
2600 State Street
Salem, OR 97310
503-945-7200
FAX 503-945-7212
TTY 503-945-7213 / 800-437-4490
http:/ /www.odf.state.or.us

April 6, 2022

Mr. George Kral
4036 NW Half Mile Lane
Forest Grove, Oregon 97116

Re: Hearings for persons adversely affected by an operation for which a written plan is required under ORS 527.670(3)

Dear Mr. Kral:

I am writing to acknowledge receipt of your request for a hearing Per ORS 527.700/OAR 629-672-0210 regarding the statutory written plan associated with Notification of Operation No. 2022-531-01917, Nordgren HL that you have provided comments on. There is a statutory time limit within which a hearing must be held, so a hearing will be scheduled for some date on or before April 22, 2022, at a location to be determined in the Pre-hearing conference call with the Administrative Law Judge. You will receive a formal notice of this hearing at a later time. Enclosed are the "Notice of Contested Case Rights and Procedures" along with the referral notice to the Office of Administrative Hearings.

Sincerely,

Greg Wagenblast

Greg Wagenblast
Civil Penalty Administrator

Enclosures
C: Matt DeVore, Assistant Attorney General, DOJ
Mike Cafferata, District Forester, ODF Forest Grove District
Case Files

Updated August 29, 2019
To be served by personal process or by mail

OREGON DEPARTMENT OF FORESTRY'S NOTICE OF CONTESTED CASE RIGHTS AND PROCEDURES

The matter that will be set for a hearing is a contested case. A contested case is like a trial, but is less formal. It allows you to contest the allegations that the Department of Forestry (Department)—acting through the State Forester and the Board of Forestry—has made against you, raise any affirmative defenses you might have, and require the Department to prove its allegations by a preponderance of evidence.

Oregon Revised Statute (ORS) 183.413 requires that you are provided with this statement of rights and procedures that describes the contested case process. This statement explains some of the procedures by which the Department conducts contested case hearings, the rights that you have at a contested case hearing, and the import and effect of a contested case hearing. This is information that you should read to prepare for the hearing.

1. **Authority and Jurisdiction.** The hearing will be conducted as provided in the Oregon Administrative Procedures Act (APA), ORS chapter 183, and the Model Rules of Procedure for Contested Cases, Oregon Administrative Rules (OAR) Chapter 137, and Division 3. *See* OAR 629-001-0005 (adopting the model rules). In addition, OAR 629-001-0010 through OAR 629-001-0055, OAR 629-670-0000 to OAR 629-670-0350, and OAR 629-672-0100 through OAR 629-672-0310 may affect the contested case process. Other relevant statues and rules that serve as authority for the hearing and affect the conduct and substance of your contested case hearing are cited in the notice or proposed order that you received from the Department and include ORS Chapter 527.

2. **Right to an attorney.** You have the right to be represented by an attorney throughout the contested case process, including at the hearing or at any prehearing conferences. *See* ORS 183.417; OAR 137-003-0550. Parties in contested cases are ordinarily and customarily represented by attorneys. Legal aid organizations may be able to assist you if you cannot afford an attorney. However, you are not required to be represented by counsel **unless** you are an agency, corporation, partnership, limited liability company, trust, government body, or unincorporated association, in which case you are required to obtain an attorney. *See* OAR 137-003-0550. If you are not represented by an attorney at the hearing, but decide that you want an attorney to represent you, you may request a recess for an opportunity to get an attorney. The ALJ will decide whether to grant such a request.

   The Department is authorized to be represented by a lay representative in certain contested cases. *See* ORS 183.452; OAR 629-001-0010; OAR 137-003-0545. As a default, the Department is represented by a lay representative in its contested cases when it is authorized to do so. The Department may obtain legal assistance from the Oregon Department of Justice if the Department needs to make legal arguments or otherwise determines that having an attorney advise or represent it is required or in the Department's best interests in a particular case. *See* ORS 183.452; OAR 629-001-0010. If the

Department determines that representation by a lay attorney is not in its interests, it will notify you that it will be represented by an attorney from the Department of Justice.

3. **Translation; assistance for persons with disabilities.** An interpreter will be provided at proceedings for non-English speaking parties or witnesses. Appropriate auxiliary aids and services will be provided at no cost to persons with disabilities who are parties or witnesses to a contested case. If you or one of your witnesses need translation assistance or assistance with a disability, please contact the Department and the Office of Administrative Hearings (OAH) ahead of any proceedings so that your needs may be accommodated. *See* OAR 137-003-0590.

4. **Notice to active duty servicemembers.** Active duty servicemembers have a right to stay contested case proceedings under the federal Servicemembers Civil Relief Act. *See generally* 50 USC 3901 *et seq*. For more information, contact the Oregon State Bar (800-452-8260), the Oregon Military Department (503-584-3571), or the nearest United States Armed Forces Legal Assistance Office (http://legalassistance.law.af.mil). The Oregon Military Department does not have a toll free telephone number.

5. **Time and place of the hearing.** A hearing date has not yet been set. The Department will refer this case to the OAH, and the OAH will schedule a hearing. *See* OAR 137-003-0515; OAR 137-003-0525. Once the hearing is scheduled, the OAH will notify you of the time, date, and place of the hearing. *See* OAR 137-003-0525. Prior to the hearing, there may be a prehearing conference. *See* OAR 137-003-0575. If a prehearing conference is set, you will be informed of the date, place, and time of the prehearing conference. *See* OAR 137-003-0575. Prehearing conferences are a flexible procedure devise designed to facilitate the conduct of the hearing and the resolution of the case. *See* OAR 137-003-0575. The purpose of a prehearing conference could include any of the following: to facilitate discovery and to resolve disagreements about discovery; to identify, simplify and clarify issues; to eliminate irrelevant or immaterial issues; to obtain stipulations of fact and to admit documents into evidence; to provide to the ALJ, agency and parties, in advance of the hearing, copies of all documents intended to be offered as evidence at the hearing and the names of all witnesses expected to testify; to authenticate documents; to decide the order of proof and other procedural matters pertaining to the conduct of the hearing; to assist in identifying whether the case might be appropriate for settlement or for a collaborative dispute resolution process and, if the agency agrees that the case is appropriate, to refer the case to the agency for settlement discussions or for exploration or initiation of a collaborative dispute resolution process; to schedule the date, time and location of the hearing or for any other matters connected with the hearing, including dates for pre-filed testimony and exhibits; and to consider any other matters that may expedite the orderly conduct of the proceeding.

   In civil penalty proceedings, conferences and hearings will be held at locations within the forest practices region of the person being assessed the penalty, unless otherwise agreed to by the State Forester and the parties. OAR 629-001-0025(3).

   Specific timelines for hearings apply to certain types of contested cases. You may view those specific timelines in OAR 629-001-0025(5).

6. **Administrative Law Judge.** The person who will preside at a hearing is known as an administrative law judge (ALJ). *See* ORS 527.687 (civil penalty hearings before an ALJ); ORS 527.700 (Board may delegate to ALJ authority to issue orders); OAR 629-001-0025(1); OAR 137-003-0600(1). The ALJ is an independent decision maker, not employed by the Department, who will rule on all matters that arise at the hearing, subject to Department consideration of matters transmitted for Department decision under OAR 137-003-0635 and OAR 629-001-0030, matters subject to Department review under OAR 137-003-0640(7) and OAR 629-001-0035 or OAR 137-003-0568, or matters subject to review by the chief ALJ under OAR 137-003-0640. The ALJ will be assigned by the Chief ALJ from the OAH. The OAH consists of employees of, and independent contractors with, the Chief ALJ.

7. **Issues to be considered at the hearing.** The issues that will be considered at the hearing are set forth in the notice or proposed order that you received from the Department, in other pre-hearing filings, or in the request for a hearing. *See* OAR 629-001-0025(4). You have the right to respond to all issues properly before the ALJ and present evidence and witnesses on those issues. *See* OAR 629-001-0025(4) (limiting the issues that may be considered at the hearing).

8. **Discovery.** Discovery is the process by which parties obtain information from each other that helps them prepare for the hearing. The rules governing discovery in this case are OAR 137-003-0566 through OAR 137-003-0572. If you want information from the Department, you must first ask the Department for that information. *See* OAR 137-003-0568. If you are not satisfied with the Department's response, you may ask the ALJ to order the Department to produce the information. *See* OAR 137-003-0568.

9. **Witnesses.** At the hearing, witnesses must testify under oath or affirmation to tell the truth. ORS 183.417(6). All witnesses are subject to cross-examination and to questioning by the ALJ. *See* ORS 183.450; OAR 137-003-0610. The Department or the ALJ can issue subpoenas on your behalf requiring witnesses to appear at the hearing upon a showing that their testimony is relevant to the case and is reasonably necessary to establish your position. *See* ORS 183.440; OAR 137-003-0585. If you are represented by an attorney, your attorney may issue subpoenas for attendance of witnesses at the hearing. ORS 183.445; OAR 137-003-0585. You are responsible for paying witness fees and mileage to any person whom you subpoena. *See* OAR 137-003-0585.

10. **Evidence.** The general purpose of a contested case hearing is to determine the facts and to apply the law to the facts. The Department will present evidence in support of its position. You will also have the right to present evidence in support of your position. The order of presentation of evidence is normally as follows:

    a. Opening Statements by the Department and by you;

    b. The Department's presentation of evidence;

    c. Your presentation of evidence;

    d. Rebuttal evidence by the Department and by you, as allowed by the ALJ; and

e. Closing Statements by the Department and by you.

See ORS 183.450; OAR 137-003-0610.

11. Burden of presenting evidence. The burden of presenting evidence to support an allegation or position rests upon the proponent of the allegation or position. Normally, each fact must be proven by a preponderance of evidence—meaning that each fact must be shown to be more likely than not. If you have the burden of proof on an issue, or if you intend to present evidence on an issue for which the Department has the burden of proof, you should be prepared to present relevant evidence, as described below.

12. Admissible evidence. To be admitted at the hearing, evidence must be relevant and be of a type commonly relied upon by reasonably prudent persons in the conduct of their serious affairs. *See* OAR 137-003-0050. The ALJ may exclude evidence that is irrelevant, immaterial, or unduly repetitious. *See* OAR 137-003-0050. The ALJ will often admit hearsay evidence. The fact that evidence is hearsay generally affects how much reliance the Department or ALJ will place on it in reaching a decision. There are generally four kinds of evidence:

a. Knowledge of the Department or the ALJ. The Department or the ALJ may take "official notice" of facts based on the Department's or ALJ's knowledge in a specialized field. This includes notice of general, technical, or scientific facts. The Department or the ALJ may also take "judicial notice" of a fact that is not subject to reasonable dispute, in that it is generally known or is capable of accurate and ready determination by resort to sources whose accuracy cannot reasonably be questioned. You will be informed if the Department or the ALJ takes "official notice" or "judicial notice" of any fact, and you will be given an opportunity to contest any facts so noticed, *see* OAR 137-003-0615;

b. Testimony of Witnesses. Testimony of witnesses, which may include you, who have knowledge of the facts;

c. Writings. Written documents including letters, maps, photographs, diagrams, and other written materials; and

d. Experiments, physical evidence, and the like. The results of experiments, demonstrations, physical evidence such as videos or samples, and similar means may be received in evidence.

See ORS 183.450; OAR 137-003-0610.

Unaccepted proposals of settlement are privileged and are not admissible at the hearing. OAR 629-001-0025(2).

13. Objections to evidence. Objections to evidence must be made at the time the evidence is offered. *See* ORS 183.450. Objections are generally made on one or more of the following grounds:

a. The evidence is inadmissible;

b. The evidence is unreliable;

c. The evidence is irrelevant or immaterial and has no tendency to prove or disprove any issue involved in the case; or

d. The evidence is unduly repetitious and duplicates evidence already received.

14. Continuances or adjournments. There are normally no continuances or adjournments granted at the end of the hearing for presentation of additional testimony or evidence. However, if you can show that the record should remain open for additional evidence, the ALJ may grant additional time for submission of such evidence.

15. Record. A record will be made of the entire proceeding to preserve and perpetuate the testimony and other evidence for appeal. *See* ORS 183.417(8)–(10). A record of live testimony will be created using a tape or digital recorder. The recording is generally not transcribed, unless there is an appeal to the Court of Appeals. However, you may obtain a copy of the recording from the OAH (the OAH may charge a fee for the copy).

16. Proposed order and exceptions. The ALJ does not have the authority to make the final decision in the case. After the hearing, the ALJ will issue a proposed order in the form of findings of fact, conclusions of law, and recommended agency action. You will be provided with a copy. *See* ORS 183.464; OAR 137-003-0645.

You will also be given an opportunity to make written objections, called "exceptions," to the ALJ's proposed order. Exceptions shall be confined to factual and legal issues which are essential to the ultimate and just determination of the proceeding and shall be based only on the grounds that either a necessary finding of fact is omitted, erroneous, or unsupported by the preponderance of the evidence on the record, a necessary legal conclusion is omitted or is contrary to law or the Board or Department policy, or prejudicial procedural error occurred. Exceptions must be numbered and must specify the disputed finding, opinions, or conclusions. The nature of the suggested error shall be specified and the alternative or corrective language provided. You will be notified of how and when exceptions to the proposed order must be filed. *See generally* OAR 629-001-0040.

17. Final order. The Board has authority to make the final decision in this case. *See* OAR 629-001-0045; OAR 137-003-0665.

There will be a final order by default if you fail to appear at the hearing. *See* ORS 183.417(4); OAR 629-001-0055(3)(b). In such an instance, the final order may be issued by the Board or by the Department acting on behalf of the Board. *See* OAR 629-001-0055(3)(b). The final order may be issued by letter, in which the Board or Department notifies you that the notice or proposed order issued to you has become the final order. In cases of final order by default, the Department will designate its file for the purpose of establishing a prima facie case.

Following a hearing, the proposed order issued by the ALJ will become the final order if no exceptions are filed within the timeframe specified, unless the Department notifies the parties and the ALJ that the Board or the Department, acting on the Board's behalf, will issue the final order. *See* OAR 629-001-0040; OAR 629-001-0055(3)(b). When the proposed order becomes the final order, the Department will issue a letter informing the parties that the proposed order has become the final order.

If exceptions are filed, the Board will make the final decision in this case and either issue a final order itself or allow the Department to issue the final order on behalf of the Board, *see* OAR 629-001-0055(3)(b), unless the Board delegates the authority to issue the final order to the ALJ, *see* OAR 629-001-0045(2); OAR 137-003-0650.

The Board (or the Department, if issuing a final order on the Board's behalf) has some ability to modify the proposed order issued by the ALJ. If the proposed order is modified in any substantial manner, the modification will be identified and explained. A proposed finding of "historical" fact will be modified only if Board determines that there is clear and convincing evidence in the record that the ALJ's finding was incorrect. *See* OAR 137-003-0665. Generally, a historical fact is a fact related to the events that transpired, as opposed to a finding of ultimate fact or a conclusion of law.

18. **Reconsideration and Appeal.** As a condition of judicial review, you must file for reconsideration or rehearing with the person or body which rendered the final order in the proceeding. *See* OAR 629-001-0050; OAR 137-003-0675. The petition must state with specificity the grounds for objection to the order and the remedy sought and must be filed within 60 calendar days of the date the final order is served. *See* OAR 629-001-0050; OAR 137-003-0675.

    If you wish to appeal the final order, you must file a petition for judicial review with the Oregon Court of Appeals within 60 days only following the date the order denying the petition for rehearing is served. See ORS 183.482. If the Department does not otherwise act, a petition for rehearing or reconsideration shall be deemed denied the 60th day following the date the petition was filed, and in such cases, petition for judicial review shall be filed within 60 days only following such date. See ORS 183.482. Date of service shall be the date on which the Department delivered or mailed its order in accordance with ORS 183.470. See ORS 183.482.

19. **Relevant Statutes and Rules.** In addition to the statutes and rules cited in the Notice or Orders, the following statutes and rules are relevant to this matter:

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OREGON FOREST PRACTICES ACT

(Generally)

527.610 Short title. ORS 527.610 to 527.770, 527.990
(1) and 527.992 are known as the Oregon Forest Practices Act. [Formerly 527.010; 1991 c.634 §2]

527.620 Definitions for ORS 527.610 to 527.770. As used in ORS 527.610 to 527.770, 527.990 and 527.992:

(1) "Board" means the State Board of Forestry.

(2) "Cumulative effects" means the impact on the environment which results from the incremental impact of the forest practice when added to other past, present and reasonably foreseeable future forest practices regardless of what governmental agency or person undertakes such other actions.

(3) "DBH" means the diameter at breast height which is measured as the width of a standing tree at four and one-half feet above the ground, on the uphill side.

(4) "Edge of the roadway" means:

(a) For interstate highways, the fence.

(b) For all other state highways, the outermost edge of pavement, or if unpaved, the edge of the shoulder.

(5) "Forest practice" means any operation conducted on or pertaining to forestland, including but not limited to:

(a) Reforestation of forestland;

(b) Road construction and maintenance;

(c) Harvesting of forest tree species;

(d) Application of chemicals;

(e) Disposal of slash; and

(f) Removal of woody biomass.

(6) "Forest tree species" means any tree species capable of producing logs, fiber or other wood materials suitable for the production of lumber, sheeting, pulp, firewood or other commercial forest products except trees grown to be Christmas trees as defined in ORS 571.505 on land used solely for the production of Christmas trees.

(7) "Forestland" means land that is used for the growing and harvesting of forest tree species, regardless of how the land is zoned or taxed or how any state or local statutes, ordinances, rules or regulations are applied.

(8) "Harvest type 1" means an operation that requires reforestation but does not require wildlife leave trees. A harvest type 1 is an operation that leaves a combined stocking level of free to grow seedlings, saplings, poles and larger trees that is less than the stocking level established by rule of the board that represents adequate utilization of the productivity of the site.

(9) "Harvest type 2" means an operation that requires wildlife leave trees but does not require reforestation. A harvest type 2 does not require reforestation because it has an adequate combined stocking of free to grow seedlings, saplings, poles and larger trees, but leaves:

(a) On Cubic Foot Site Class I, II or III, fewer than 50 11-inch DBH trees or less than an equivalent basal area in larger trees, per acre;

(b) On Cubic Foot Site Class IV or V, fewer than 30 11-inch DBH trees or less than an equivalent basal area in larger trees, per acre; or

(c) On Cubic Foot Site Class VI, fewer than 15 11-inch DBH trees or less than an equivalent basal area in larger trees, per acre.

(10) "Harvest type 3" means an operation that requires reforestation and requires wildlife leave trees. This represents a level of stocking below which the size of operations is limited under ORS 527.740 and 527.750.

(11) “Landowner” means any individual, combination of individuals, partnership, corporation or association of whatever nature that holds an ownership interest in forestland, including the state and any political subdivision thereof.

(12) “Operation” means any commercial activity relating to the establishment, management or harvest of forest tree species except as provided by the following:

(a) The establishment, management or harvest of Christmas trees, as defined in ORS 571.505, on land used solely for the production of Christmas trees.

(b) The establishment, management or harvest of hardwood timber, including but not limited to hybrid cottonwood, that is:

(A) Grown on land that has been prepared by intensive cultivation methods and that is cleared of competing vegetation for at least three years after tree planting;

(B) Of a species marketable as fiber for inclusion in the furnish for manufacturing paper products;

(C) Harvested on a rotation cycle that is 12 or fewer years after planting; and

(D) Subject to intensive agricultural practices such as fertilization, cultivation, irrigation, insect control and disease control.

(c) The establishment, management or harvest of trees actively farmed or cultured for the production of agricultural tree crops, including nuts, fruits, seeds and nursery stock.

(d) The establishment, management or harvest of ornamental, street or park trees within an urbanized area, as that term is defined in ORS 221.010.

(e) The management or harvest of juniper species conducted in a unit of less than 120 contiguous acres within a single ownership.

(f) The establishment or management of trees intended to mitigate the effects of agricultural practices on the environment or fish and wildlife resources, such as trees that are established or managed for windbreaks, riparian filters or shade strips immediately adjacent to actively farmed lands.

(g) The development of an approved land use change after timber harvest activities have been completed and land use conversion activities have commenced.

(13) “Operator” means any person, including a landowner or timber owner, who conducts an operation.

(14) “Single ownership” means ownership by an individual, partnership, corporation, limited liability company, trust, holding company or other business entity, including the state or any political subdivision thereof. Single ownership includes ownership held under different names or titles where the same individual or individuals, or their heirs or assigns, are shareholders (other than those of public corporations whose stock is traded on the open market), partners, business trustees or officers, or otherwise have an interest in or are associated with each property.

(15) “State Forester” means the State Forester or the duly authorized representative of the State Forester.

(16) “Suitable hardwood seedlings” means any hardwood seedling that will eventually yield logs or fiber, or both, sufficient in size and quality for the production of lumber, plywood, pulp or other forest products.

(17) “Timber owner” means any individual, combination of individuals, partnership, corporation or association of whatever nature, other than a landowner, that holds an ownership interest in any forest tree species on forestland.

(18) “Visually sensitive corridor” means forestland extending outward 150 feet, measured on the slope, from the outermost edge of the roadway of a scenic highway referred to in ORS 527.755, along both sides for the full length of the highway.

(19) “Wildlife leave trees” means trees or snags required to be retained as described in ORS 527.676 (1).

(20) “Written plan” means a document prepared by an operator, timber owner or landowner that describes how the operation is planned to be conducted. [1971 c.316 §3; 1987 c.919 §9; 1991 c.547 §1; 1991 c.634 §3; 1991 c.919 §1; 1995 s.s. c.3 §39; 1996 c.9 §2; 1999 c.59 §166; 2001 c.451 §1; 2003 c.740 §2; 2011 c.276 §6]

527.630 Policy; rules. (1) Forests make a vital contribution to Oregon by providing jobs, products, tax base and other social and economic benefits, by helping to maintain forest tree species, soil, air and water resources and by providing a habitat for wildlife and aquatic life. Therefore, it is declared to be the public policy of the State of Oregon to encourage economically efficient forest practices that ensure the continuous growing and harvesting of forest tree species and the maintenance of forestland for such purposes as the leading use on privately owned land, consistent with sound management of soil, air, water, fish and wildlife resources and scenic resources within visually sensitive corridors as provided in ORS 527.755 and to ensure the continuous benefits of those resources for future generations of Oregonians.

(2) It is recognized that operations on forestland are already subject to other laws and to regulations of other agencies which deal primarily with consequences of such operations rather than the manner in which operations are conducted. It is further recognized that it is essential to avoid uncertainty and confusion in enforcement and implementation of such laws and regulations and in planning and carrying out operations on forestlands.

(3) To encourage forest practices implementing the policy of ORS 527.610 to 527.770 and 527.990 and 527.992, it is declared to be in the public interest to vest in the State Board of Forestry exclusive authority to develop and enforce statewide and regional rules pursuant to ORS 527.710 and to coordinate with other state agencies and local governments which are concerned with the forest environment.

(4) The board may adopt and enforce rules addressing scenic considerations only in accordance with ORS 527.755.

(5) The board shall adopt and enforce forest practice rules to reduce the risk of serious bodily injury or death from a rapidly moving landslide only in accordance with ORS 527.710 (10). As used in this subsection, "rapidly moving landslide" has the meaning given in ORS 195.250.

(6) The State of Oregon should provide a stable regulatory environment to encourage investment in private forestlands. [1971 c.316 §4; 1987 c.919 §10; 1991 c.634 §4; 1991 c. 919 §10; 1995 s.s. c.3 §39L; 1996 c.9 §14; 1999 c.1103 §11; 2003 c.740 §9]

527.670 Commencement of operations; rules; written plan; effect of plan; notice of chemical application; fees. (1) The State Board of Forestry shall designate the types of operations for which notice shall be required under this section.

(2) The board shall identify by rule the types of operations that require a written plan.

(3) In addition to any other types of operations identified by the board, the board shall adopt rules to require a written plan for the following:

(a) An operation that occurs within 100 feet of a stream determined by the State Forester to be used by fish or for domestic use, unless:

(A) The board, by rule, provides that a written plan is not required because the operation will be conducted according to a general vegetation retention prescription described in administrative rule;

(B) The operation will not directly affect the riparian management area and the State Forester, acting under authority granted by a board rule, waives the written plan requirement; or

(C) The operation will be conducted pursuant to a stewardship agreement entered into under ORS 541.973.

(b) An operation that occurs within 100 feet of a resource site that is inventoried under ORS 527.710 (3) as a significant wetland but is not classified by board rule as an estuary, unless:

(A) The board, by rule, provides that a written plan is not required because the operation will be conducted according to a general vegetation retention prescription described in administrative rule;

(B) The operation will not directly affect the riparian management area and the State Forester, acting under authority granted by a board rule, waives the written plan requirement; or

(C) The operation will be conducted pursuant to a stewardship agreement entered into under ORS 541.973.

(c) An operation that occurs within 300 feet of a resource site inventoried under ORS 527.710 (3), other than a site described in paragraph (b) of this subsection, unless the operation:

(A) Will be conducted pursuant to a stewardship agreement entered into under ORS 541.973; and

(B) Is consistent with the purposes and policies of any relevant Safe Harbor Agreements or Candidate Conservation Agreements entered into between the State of Oregon and agencies of the United States Government, pursuant to the federal Endangered Species Act of 1973 (P.L. 93-205, 16 U.S.C. 1531 et seq.) and federal regulations.

(4) The distances set forth in subsection (3) of this section are solely for the purpose of defining an area within which a hearing may be requested under ORS 527.700 and not the area to be protected by the board's rules adopted pursuant to ORS 527.710 (3)(c).

(5) For the purpose of determining the distances set forth in subsection (3) of this section "site" means the specific resource site and not any additional buffer area.

(6) An operator, timber owner or landowner, before commencing an operation, shall notify the State Forester. The notification shall be on forms provided by the State Forester and shall include the name and address of the operator, timber owner and landowner, the legal description of the operating area, and any other information considered by the State Forester to be necessary for the administration of the rules promulgated by the board pursuant to ORS 527.710. Promptly upon receipt of such notice, the State Forester shall provide a copy of the notice to whichever of the operator, timber owner or landowner did not submit the notification. The State Forester shall provide a copy of notices involving chemical applications to persons within 10 miles of the chemical application who hold downstream surface water rights pursuant to ORS chapter 537, if such a person has requested that notification in writing. The board shall adopt rules specifying the information to be contained in the notice. All information filed with the State Forester pertaining to chemical applications shall be public record.

(7) An operator, timber owner or landowner that filed an original notification shall notify the State Forester of any subsequent change in the information contained in the notification.

(8) Within six working days of receipt of a notice or a written plan filed under subsection (6) or (7) of this section, the State Forester shall make a copy of the notice or written plan available to any person who requested of the State Forester in writing that the person be provided with copies of notice and written plan and who has paid any applicable fee established by the State Forester for such service. The State Forester may establish a fee for providing copies of notices and written plans under this subsection not to exceed the actual and reasonable costs. In addition, the State Forester shall provide a copy of the notification to the Department of Revenue and the county assessor for the county in which the operation is located, at times and in a manner determined through written cooperative agreement by the parties involved.

(9) Persons may submit written comments pertaining to the operation to the State Forester within 14 calendar days of the date the notice or written plan was filed with the State Forester under subsection (2), (6) or (7) of this section. Notwithstanding the provisions of this subsection, the State Forester may waive any waiting period for operations not requiring a written plan under subsection (3) of this section, except those operations involving aerial application of chemicals.

(10) If an operator, timber owner or landowner is required to submit a written plan of operations to the State Forester under subsection (3) of this section:

(a) The State Forester shall review a written plan and may provide comments to the person who submitted the written plan;

(b) The State Forester may not provide any comments concerning the written plan earlier than 14 calendar days following the date that the written plan was filed with the State Forester nor later than 21 calendar days following the date that the written plan was filed; and

(c) Provided that notice has been provided as required by subsection (6) of this section, the operation may commence on the date that the State Forester provides comments or, if no comments are provided within the time period established in paragraph (b) of this subsection, at any time after 21 calendar days following the date that the written plan was filed.

(11)(a) Comments provided by the State Forester, or by the board under ORS 527.700 (6), to the person who submitted the written plan are for the sole purpose of providing advice to the operator, timber owner or landowner regarding whether the operation described in the written plan is likely to comply with ORS 527.610 to 527.770 and rules adopted thereunder. Comments provided by the State Forester or the board do not constitute an approval of the written plan or operation.

(b) If the State Forester or the board does not comment on a written plan, the failure to comment does not mean that an operation carried out in conformance with the written plan complies with ORS 527.610 to 527.770 or rules adopted thereunder nor does the failure to comment constitute a rejection of the written plan or operation.

(c) If the State Forester or board determines that an enforcement action may be appropriate concerning the compliance of a particular operation with ORS 527.610 to 527.770 or rules adopted under ORS 527.610 to 527.770, the State Forester or board shall consider, but are not bound by, comments that the State Forester provided under this section or comments that the board provided under ORS 527.700.

(12) If the operation is required under rules described in subsection (3) of this section to have a written plan and comments have been timely filed under subsection (9) of this section pertaining to the operation requiring a written plan, the State Forester shall:

(a) Provide a copy of the State Forester's review and comments, if any, to persons who submitted timely written comments under subsection (9) of this section pertaining to the operation; and

(b) Provide to the operator, timber owner and landowner a copy of all timely comments submitted under subsection (9) of this section. [1971 c.316 §9; 1987 c.919 §12; 1991 c.634 §5; 1991 c.919 §11; 1995 s.s. c.3 §39a; 1996 c.9 §3; 1997 c.413 §1; 2003 c.539 §39; 2003 c.740 §3; 2007 c.608 §5; 2011 c.54 §1]

527.700 Appeals from orders of State Forester; hearing procedure; rules; stay of operation. (1) Any operator, timber owner or landowner affected by any finding or order of the State Forester issued under ORS 527.610 to 527.770 and 527.992 may request a hearing within 30 days after issuance of the order. The hearing shall be commenced within 14 days after receipt of the request for hearing and a final order shall be issued within 28 days of the request for the hearing unless all parties agree to an extension of the time limit.

(2) The State Board of Forestry may delegate to the administrative law judge the authority to issue final orders on matters under this section. Hearings provided under this section shall be conducted as contested case hearings under ORS 183.413 to 183.470. The board may establish such rules as it deems appropriate to carry out the provisions of this section. Appeals from final hearing orders under this section shall be provided in ORS 183.482, except that the comments of the board or the State Forester concerning a written plan are not reviewable orders under ORS 183.480.

(3) Any person adversely affected or aggrieved by an operation described in subsection (4) of this section may file a written request to the board for a hearing if the person submitted written comments pertaining to the operation within the time limits established under ORS 527.670 (9).

(4) A request for hearing may be filed under subsection (3) of this section only if a written plan was required by rules adopted under ORS 527.670 (3).

(5) A request for hearing filed under subsection (3) of this section shall be filed within 14 calendar days of the date the State Forester completed review of the written plan and issued any comments. Copies of the complete request shall be served, within the 14-day period, on the operator, timber owner and landowner. The request shall include:

(a) A copy of the written plan on which the person is requesting a hearing;

(b) A copy of the comments pertaining to the operation that were filed by the person requesting the hearing;

(c) A statement that shows the person is adversely affected or aggrieved by the operation and has an interest which is addressed by the Oregon Forest Practices Act or rules adopted thereunder; and

(d) A statement of facts that establishes that the operation is of the type described in ORS 527.670 (3).

(6) If the board finds that the person making the request meets the requirement of subsection (5)(c) of this section, the board shall set the matter for hearing within 21 calendar days after receipt of the request for hearing. The operator, timber owner and landowner shall be allowable parties to the hearing. The person requesting the hearing may raise, in the hearing, only those issues that the person raised in written comments filed under ORS 527.670 (9) relating to conformity with the rules of the board. The board shall issue its own comments, which may affirm, modify or rescind comments of the State Forester, if any, on the written plan within 45 days after the request for hearing was filed, unless all parties agree to an extension of the time limit. The comments of the board or of the State Forester concerning a written plan are not reviewable orders under ORS 183.480.

(7) The board may award reasonable attorney fees and expenses to each of the prevailing parties against any other party who the board finds presented a position without probable cause to believe the position was well-founded, or made a request primarily for a purpose other than to secure appropriate action by the board.

(8)(a) Upon the written request of a person requesting a hearing under subsection (3) of this section, a stay of the operation subject to the hearing may be granted upon a showing that:

(A) Commencement or continuation of the operation will constitute a violation of the rules of the board;

(B) The person requesting the stay will suffer irreparable injury if the stay is not granted; and

(C) The requirements of subsections (3), (4) and (5) of this section are met.

(b) If the board grants the stay, it shall require the person requesting the stay to give an undertaking which may be in the amount of the damages potentially resulting from the stay, but in any event shall not be less than $15,000. The board may impose other reasonable requirements pertaining to the grant of the stay. The board shall limit the effect of the stay to the specific geographic area or elements of the operation for which the person requesting the stay has demonstrated a violation of the rules and irreparable injury under paragraph (a) of this subsection.

(c) If the board determines in its comments that the written plan pertaining to the operation for which the stay was granted is likely to result in compliance with ORS 527.610 to 527.770 or the rules of the board, the board may award reasonable attorney fees and actual damages in favor of each of the prevailing parties, to the extent incurred by each, against the person requesting the stay.

(9) If the board rescinds or modifies the comments on the written plan as submitted by the State Forester pertaining to any operation, the board may award reasonable attorney fees and costs against the state in favor of each of the prevailing parties.

(10) As used in this section, “person” means any individual, partnership, corporation, association, governmental subdivision or public or private organization of any character. [Formerly 527.240; 1983 c.28 §2; 1987 c.919 §13; 1999 c.849 §110; 2003 c.75 §94; 2003 c.740 §4; 2011 c.54 §2]

Curriculum Vitae of **Keith Baldwin**

2600 State Street, Salem, Oregon 97310 • 503-689-6972 • keith.d.baldwin@odf.oregon.gov

Updated April 12, 2022

Summary

Over 30 years of experience in natural resource management, involving staff and field positions that developed, implemented and restructured programs.

Current Employment

- Forest Practices Field Coordinator, Oregon Department of Forestry, since January 2013
  - Reviewed Forest Practices compliance issues on operations sites with Stewardship Foresters and their supervisors to ensure appropriate interpretation and enforcement actions as described in the statutes, rules and enforcement directive.
  - Reviewed district enforcement actions, including written statements of unsatisfactory condition, criminal and civil penalty prosecution, mitigation and arbitration.
  - Provided timely response to stewardship foresters and their supervisors regarding questions on statutes, rules, guidance and policy.
  - Conducted on-site reviews and complex rule interpretation.

Previous Employment

- Government-to-Government Project Leader, ODF, Executive Team, 2017
  - Coordinated the update to the Government-to-Government policy
  - Coordinated development of the procedures to implement the policy.
- Stewardship Forester, ODF, Molalla and Lyons, 15 years spanning 1995-2012 with several breaks for developmental assignments in 2006, 2008 and 2010-2011
  - Administered the Forest Practices Act and rules with forest landowners and operators.
  - Provided technical assistance in forest management planning.
- Planning and Policy Coordinator, ODF State Forests Division, 2010-2011
  - Assisted in coordinating revisions to the Elliott State Forest Management Plan
  - Coordinated updating and revising policy, procedures and guidance documents.
- Forest Resource Trust Manager, ODF, Private Forests Division, 2008
  - Reconvened the Forest Resource Trust Advisory Committee to restructure the program, which involved drafting the legislative concept and amending administrative rules.
- GIS Coordinator, ODF, Private Forests Division, 2006
  - Coordinated statewide implementation of a GIS software program and data for Stewardship Foresters to review Notices of Operation / Applications for Permit.
- Resource Trust Staff Specialist, ODF, Private Forests Division, 1993-1995
  - Assisted in the development of the administrative rules, guidance and contract.
- Forest Health Forester, ODF, Pendleton, 1992-1993
  - Provided technical assistance in forest management planning.
- Agroforestry Extension Agent, U.S. Peace Corps, Guatemala, 1989-1991
  - Provided technical assistance to subsistence farmers to improve agricultural and forestry practices.
- Forester and Forest Technician, ODF, Astoria, 1980-1987
  - Timber Sale Contract Administrator.
  - Conducted timber sale layout and contract write-up.

Education

- Periodic training in administering the Forest Practices Act and rules, GIS, fire prevention and suppression by Oregon Department of Forestry, since 1980
- Periodic training in water quality, pesticides, reforestation, land use changes, cultural resources, and forest management planning, by other government agencies and private entities, since 1980
- Professional Certificate in Tribal Relations, Portland State University, 2019
- Certificate in language, culture and agroforestry studies, U.S. Peace Corps, Guatemala, 1989
- Course studies at Western Seminary, Portland, Oregon, 1989
- Graduate Certificate of Bible, Multnomah Bible School, Portland, Oregon, 1988
- B.S. in Forest Management, *Cum laude*, Washington State University, Pullman, Washington, 1980
- Course studies at Wenatchee Valley Community College, Wenatchee, Washington, 1976

Training Conducted

- Government-to-Government and cultural resource protection training for agency staff, forest landowners and operators.
- Forest Practices Act training for Stewardship Foresters, periodically since January, 2013
- Road Maintenance and Wet Weather Road Use Workshops for Operators, Landowners and Stewardship Foresters, 2013
- Protection of Cultural Resources for Southern Oregon Area Stewardship Forester Conference, 2013
- Wet Weather Road Use for Northwest Oregon Area Stewardship Forester Conference, 2013
- Forest Stewardship Plan Writing for landowners at OSU Tree School, 2008 and 2009
- Stream Crossings and the Forest Practices Rules for landowners at OSU Tree School, 2002

Oregon Department of Forestry Agency Awards

- Technical Achievement Award, 2020
- Private Forests Zoom Hot Topics Team Award, 2018
- Workforce Diversity Award, 2017
- Private Forests FERNS Team Award, 2014
- Elliott Planning Team Award, 2011
- Molalla Unit Team Award, 2009

Michael R. Buren *Geotechnical Specialist*

503-945-7647

Michael.R.Buren@oregon.gov

Professional Summary

During 31 years of work experience since earning his Masters degree, Mr. Buren has gained a broad technical base in geologic disciplines including engineering, hydro, and environmental geology. His present experience in Forest Management has given him sole responsibility for his professional level technical work. This work history gives Mr. Buren broader technical, leadership and problem-solving skills than typical geologists.

Program Startup • Project Management • Project Estimating • Mentoring Employees • Engineering Geology • Subsurface Investigation • Landslide Investigation • Quarry Investigation • Construction Inspection • Hydrogeologic Investigation • Aquifer Testing • Dewatering Estimates • Groundwater Modeling • Water Sampling/Testing • Managing Projects Overseas • Slope Analysis in Forest Management

Work Experience

2011 – Present, **Geotechnical Specialist**. Oregon Department of Forestry, 2600 State Street, Bldg D, Salem, OR, 97310

Performs landslide hazard and risk assessments for the protection of natural resources and public safety. Produces technical input for the department requiring self reliance, no technical supervision and limited peer review. Makes decisions directly affecting the level of success that the department, as well as forest landowners and operators, achieve in their efforts to avoid impacts to natural resources and public safety.

Key Accomplishments:
- Evaluated timber harvest on about 5,000 acres of modified clearcut and 5,400 acres of partial cut for the 2014 planning year.
- Interfaced with forest road-building and maintenance activities to ensure resource protection.

2001 – 2011, **Water Projects Manager**. Agrinas Kazakhstan (international aid and development organization), Jeltoksan Street 4 #2, Kyzylorda, Republic of Kazakhstan

Started, built, funded and maintained a drinking water program for a charitable organization. Wrote proposals to secure program funding from governments, charitables, and individuals. Developed and monitored project budgets, hired workers, wrote progress reports to donors. Used sustainable designs for small water systems to bring water into schools and kindergartens. Mentored and taught Kazakh colleagues. Started a program benefiting disadvantaged village women to improve their knowledge in health, nutrition, sanitation, and water issues in six villages.

Key Accomplishments:
- Conceptualized, proposed, and implemented five water projects in Kazakhstan.
- Improved the lives of about 5,600 poor Kazakh villagers.
- Learned to speak Kazakh, work, and function in difficult foreign environment.

1993 - 2001, **Project Engineering/Environmental Geologist**. Oregon Department of Transportation, Geo-Hydro Section, 123 NW Flanders, Portland, Oregon, 97209

Conducted geologic investigations related to soil and rock conditions for civil engineering works projects, and public safety. Issues investigated included: 1) Bridge, Retaining Wall, Embankment, Building, and

Culvert Foundations 2) Rock- and Soil-Slope Stability 3) Landslide Investigations 4) Excavation De-watering. Investigations always involved careful record-keeping and written or verbally communicated findings.

Prepared Phase I and II Environmental Site Assessments for property purchase, construction, and property sales. Performed UST pulls and site closures under DEQ rules. Helped prepare environmental impact statements for several projects. Conducted water quality sampling from groundwater and surface water sources. Performed drilling and construction of 30 wells to study groundwater and aquifer conditions. Conducted aquifer tests to determine groundwater flow rates.

Key Accomplishments: • Responded on an emergency basis to about 30 landslides interfacing with highway managers to provide timely advice on public safety and slide repair.
• Regularly monitored slope stability on landslides using 35-40 slope inclinometers and piezometers.
• Supervised exploration and cleanup of hazardous materials on highway maintenance and construction sites including UST removals and regulatory reporting bringing them into compliance with state environmental regulations and preventing action against ODOT.

July - October 1997, **Project Engineering Geologist**. *(during leave from ODOT)* Loreto Hydroelectric Project. HCJB World Radio (aid and development organization), Casilla 17-17-691, Quito, Ecuador, South America

Performed geologic reconnaissance for proposed hydro-electric power station in the Andes Mountains of Ecuador. Addressed geologic hazards and made recommendations for proposed penstock, powerhouse, and access road alignments. Issues investigated involved depth to bedrock, unstable compressible peaty soils, slope stability/steep slopes, roadway design, cost estimates for earthwork. Lived and worked for three months in village setting.

Key Accomplishment: Reconnaissance allowed the project to be advanced to build phase.

1990 - 1993, **Staff Geologist**. David J. Newton Associates, Inc.(civil, geologic and water resources consulting firm), 1201 SW 12th Ave., Suite 400, Portland, Oregon, 97205

Consulted in engineering geology and hydro-geology. Conducted field work and analysis dealing with surface mines investigating sedimentation, reclamation, drainage, rock quantity and quality, rock-face and soil slope stability, environmental impact, and groundwater. Conceptualized and constructed groundwater flow models to simulate existing and proposed irrigation well impacts, wetland seepage, surface to groundwater relationships, and impacts to natural surface and groundwater bodies due to surface mining. Conducted water quality sampling from groundwater and surface water sources.

Key Accomplishment: Secured the first-ever water right issued by Oregon Water Resources Department using numerical groundwater computer modeling (MODFLOW).

Education and Registration

M.S., Geology - Northern Arizona University, Flagstaff, Arizona, May 1992
B.S., Geology - Oregon State University, Corvallis, Oregon, June 1987
Registered Professional Geologist and Certified Engineering Geologist – Oregon

GeoScience, Inc.

DEBRIS FLOW RISK ASSESSMENT
Stimson Lumber Company
Black Diamond Harvest Unit
T 1N, R 4W, Sections 28 & 29

June 13, 2007

Prepared for:
Samuel Howard
Stimson Lumber Company
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Forest Grove OR 97116

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EXECUTIVE SUMMARY

The Black Diamond Harvest Unit is located in T 1N, R 4W, Sections 28 and 29, on the east-facing slope of a ridge extending southeast from Gales Peak. Both the observations at the site and the stereographic review of historical aerial photographs indicate that portions of the harvest unit and surrounding area have been subject to large-scale, deep-seated slope movements since a long time prior to the first harvest of timber in the area in the late 1940s and early 1950s.

Residence A is located on an apparent debris fan originating at the mouth of Basin 5. The residence is located approximately 360 from the point of loss of confinement, essentially directly downslope from the alignment of the draw above the fan, and rock fragments up to 2 feet in large diameter were found in the immediate vicinity of the house. This indicates that, in the past, prior to timber harvest in this area, debris flows have reached the area of Residence A with sufficient energy to cause damage to the house, and possibly, injure the residents. Therefore, GeoScience proposes that the Impact Rating for this residence is "Moderate", resulting in a Downslope Public Safety Risk Level of "Intermediate". However, the presence of a large pre-timber operations fan indicates that not harvesting the HLHL areas within the harvest unit will not significantly reduce the risk at least to Residence A.

There is little evidence to indicate that past debris flows have reached Residence B, but the natural deposits and system in this area was significantly modified during and following a slope movement of "overburden" down a small valley from the dump site of the quarry adjoining to the north and northwest. Therefore, statements regarding the possibility of impacts to House B are difficult. Nonetheless, this house appears to be located mostly off the higher-energy portion of the fan deposit.

Based on discussions at the site, and with Stimson Lumber Co. and ODF personnel, it has been determined that the most ideal way to proceed is to construct a debris flow diversion berm and associated overflow channel to significantly reduce the risk of debris flow impact to Residences A and B.

A conceptual berm design consists of berm constructed with 1.5H : 1V slopes on the south side and 2.5H : 1V slopes on the north side. A 15-foot elevation differential between crest of berm and overflow channel floor and a 30-foot wide diversion channel is recommended. It is also recommended to armor the channel side of the berm with large rip rap stones. The berm is designed to redirect the direction of moving debris flows by approximately 27 degrees over a distance of more than 200 feet. The diversion channel discharges to a low-lying area south of Residence A. The creek is kept along its current alignment by a low secondary dam transverse to the long axis of the berm, requiring an approximately 160-foot culvert through the berm.

INTRODUCTION

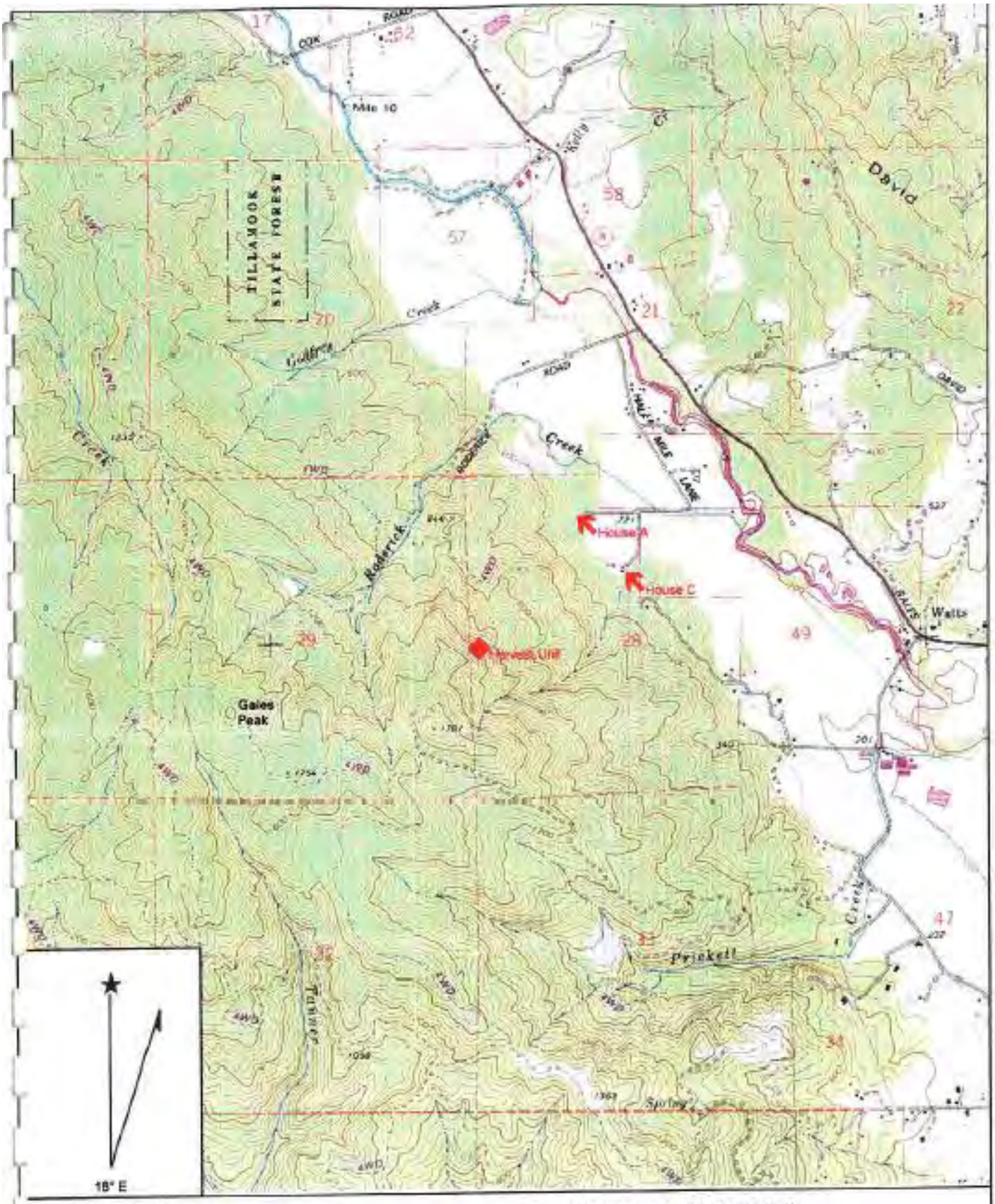
This report presents the results of a debris flow risk assessment conducted on a timber harvest unit located on the east-facing slopes of an unnamed ridge south of Gales Creek, in T 1N, R 4W, Sections 28 & 29 (Figure 1). The unit is located above three residences, none of which appear to be within the Further Review Area as described in the guidance. The assessment was conducted for Samuel Howard, the Assistant Unit Forester in Stimson Lumber Company's Gaston office, and follows guidance presented in ODF Technical Note 2, Version 2.0 (Appendix A).

AERIAL PHOTO REVIEW

Aerial photos were obtained both from the University of Oregon Aerial Photography Collection. Photo years available at the U of O included 1936, 1948, 1955, 1963, 1978, and 1989. The area was first harvested between the 1948 and 1955 air photos. Because the air photos had been pulled for the Issues Harvest Unit Report (GeoScience Inc. 12/16/06), the high-resolution scans did not cover this area for the air photo years when tree cover was minimal. However, relatively good exposure of the site is shown on the 1963 photos which have been used to perform geomorphic mapping and to show the locations of pertinent features. Scans of a stereo-pair of 1963 air photos are included on the CD in Appendix A. The locations of the residences of concern were copied from more recent air photos and maps available from Stimson. Figure 2 shows a delineation of drainage basins, creeks, and the debris fan near Residences A and B. For ease of reference in this report, the drainage basins were designated with a number and sub-basins were designated with letters. The harvest unit is shown in green and covers only the upper portions of the subject draws. The most important observation on the 1963 aerial photos includes a significant fan-shaped convex landform at the mouth of Draw 5. Residence A is located on this feature and Residence B is located off the fan to the NE. A much longer and narrower fan-shaped feature is present at the mouth of Draw 1 in the vicinity of Residence C, but this area was not visited during the field assessment because a decision had already been made by the ODF geotechnical specialists that the risk to this residence was low. As a result, no mapping of debris flow deposits (if any) was performed at that location. It is GeoScience policy to only map features on a geomorphic basis if the origin can be verified by geologic evidence in the field. Because the extent of the debris fan (if any) was not field-verified for Draw 1, no fan is shown at that location although it appears probable that a fan is present.

GEOLOGY

The *Geologic Map of Oregon* (Walker and McLeod, USGS, 1991) indicates that upper part of the ridge is underlain by *Ttv* (Upper and Middle Eocene Tillamook Volcanics), which are reported to consist of "Subaerial basaltic flows and breccia and submarine basaltic breccia, pillow lavas, lapilli and augite tuff with interbeds of basaltic sandstone, siltstone, and conglomerate. Includes some basaltic andesite, and, near the top of the sequence, some dacite". The lower part of the ridge is reported to be underlain by *Ti* (Oligocene Mafic Intrusions) which are described as: "Sheets, sills, and dikes of massive granophyric ferrogabbro; some bodies strongly differentiated and include pegmatitic gabbro, ferrogranophyre and granophyre".



Name: GALES CREEK
Date: 6/13/2007
Scale: 1 inch equals 2000 feet

Location: 045° 32' 36.8" N 123° 11' 37.0" W
Caption: Figure 1: Location Map

GeoScience, Inc.

Stimson Lumber Co., Forest Grove, Black Diamond Unit DFRA

Figure 2: Geomorphic/Geologic Interpretation, Houses and HarvestUnit

Not to Scale. Base from 1963 Aerial Photograph

FIELD OBSERVATIONS

The site was visited on December 8, 2006. Residence A is located within a few hundred feet of the apex of a low-sloping convex landform originating at the mouth of Basin 5 (see also site photos). Angular and rounded igneous rock fragments up to 2 feet in maximum diameter have been pulled from the garden area immediately side-slope (S) and up-slope from the house and placed as landscaping rocks in the southern yard of the residence (site photos). The main creek is located in a channel to the northwest of the house, following the northern boundary of the convex land form, running northeast-ward along the base of the adjacent slope. Upstream from and near the house, the creek channel contains igneous rock fragments to 18 or more inches in diameter. To the north of the residence, and in the vicinity of residence B, the creek channel has been significantly impacted by debris from a failure within Draw 6, which resulted from improper placement of fill ("overburden") at the quarry adjacent to the area to the north.

Residence B is located a couple of hundred feet east of the head of the northeast boundary of the convex landform originating at the mouth of Basin 5. The area has been extensively re-graded recently as the result of the debris which was deposited there following the failure at the quarry. Therefore, natural evidence regarding debris flow deposition has been mostly destroyed or significantly modified. Nonetheless, no natural larger rock fragments were found either in the creek channel in this vicinity or in isolated areas not affected by the recent slide. The residence is located within a few degrees of the channel alignment of the creek segment following the north boundary of the convex landform.

Within the harvest unit itself, evidence of previous large-scale slope movement, and debris flow deposition was noted in the vicinity of where the main access road to the unit crosses the main creek within Draw 5. Isolated rock fragments to 2.5 feet large diameter were noted in a deposit a few tens of feet upstream from the culvert and irregular relatively gently sloping ("hummocky") topography consistent with deep-seated movement is present on the east side of the creek valley.

An attempt was made to determine the nature of the deposits in the creek valley directly downstream from the road crossing. However, the brush in this area of relatively young re-prod is sufficiently thick to effectively hide most of the area.

DISCUSSION

The harvest unit is located in an area which has been subject to large-scale deep-seated slope movements for a significant time, predating human activities and forest management in the area. The slope movements extend from near the top of the ridges to the main creeks. In some cases, the slope movements have resulted in the creation of "inner gorges" where the lower several tens of feet of the slopes adjacent to the creek channel are steeper than the rest of the slope. It appears that some of these over-steepened inner-gorge slopes are the main source of debris flows in these drainage basins. The lower edges of the deep-seated movements are continuously eroded by the creeks and lose lateral support, resulting in continuation of the deep-seated sliding movement.

This system does not appear to have been changed significantly with the advent of forest management. Although the entire area was subject to significant haul road, skid road and cat trail construction during the late 1940s and early 1950s harvest of the area, no evidence for debris flow activity could be found on the 1955 (post-harvest) air photos. A debris flow originated in the steep head wall of basin 1e between 1955 and 1963, probably as a result of either poor water management on the ridge-line road immediately above the initiation site, or as a result of side-casting, or both. The resulting debris flow appears to have reached the western edge of the fan but does not appear to have affected the area around residence C. In basin 5, no evidence of debris flow activity was noted following the forest operations in the early 1950s.

However, Residence A is located on a larger fan-shaped landform which appears to be constructed of material consistent with a debris flow origin, consisting of a silty sand with larger rock fragments. Residence B is located just off the outer northeastern limit of this landform. Measurements by ODF personnel indicate that Residence A is located 360 feet from the point of loss of confinement for creek 5. As a result, as described in ODF guidance, the residence is only located within the Further Review Area as a result of being constructed on the fan landform. Based on guidance and the relatively low slopes on the fan (average slope to house approximately 15 %), ODF personnel had relatively little concern regarding Residence A, and the concern was greater for Residence B, located closer to the creek channel. However, after more detailed assessment of the area around the house and observing the presence of rock fragments up to 2 feet in large diameter side-slope from Residence A, it appears that, in the past, debris flows from Basin 5 have reached the area of this house with significant energy. As a result, GeoScience recommends that the Impact Rating for this residence be upgraded to "MODERATE" (Figure 3). Because the residence is in Exposure Category "A", the resulting Downslope Public Safety Risk Level is "INTERMEDIATE"(Figure 4). This designation currently requires that half of the High Landslide Hazard Locations (HLHLs) in the area of the harvest unit located within Basin 5 be at a stand age of 9 years or older. Due to the configuration and topography within the unit, this designation realistically precludes harvest of large portions of the unit, because yarding has to occur over and through the HLHL areas. In addition, because debris flows have reached the current position of Residence "A" in the past, without influence from timber harvest, even without harvesting of the proposed Black Diamond Unit, debris flows could occur and reach the residence in the future.

As a result, it was proposed to significantly reduce the risk of impacts to Residence A (and B) from either harvest-induced or natural debris flows by constructing a debris flow diversion berm on the fan to direct potential debris flows to the area south of Residence A. The approximate proposed location of the berm is shown on Figure 5 and a topographic map of the berm design is attached in Appendix D. The berm is designed with a 1.5H : 1V slope facing the diversion channel and a 2.5H : 1V slope on the outside of the berm. Ideally, the side of the berm facing the channel would be lined with large rock fragments (large rip rap) at least in the upper two thirds of the berm, to preclude erosion of the berm by a moving debris flow. The berm is also designed with a relatively low smaller berm separating the overflow or diversion channel from the current creek channel immediately downstream of the culvert intake. This smaller berm is designed to keep the creek in its current channel and prevent channel shifts during normal high flows.

Stimson Lumber Co., Forest Grove, Black Diamond Unit DFRA

Figure 3: Impact Rating Relative to Residence A

Not to Scale. Base from 1963 Aerial Photograph

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Stimson Lumber Co., Forest Grove, Black Diamond Unit DFRA

Figure 4: Downslope Public Safety Risk Level Relative to Residence A

Not to Scale. Base from 1963 Aerial Photograph

GeoScience, Inc.

However, in the event of a debris flow, the flow is expected to remove this berm and proceed down the diversion channel. The diversion channel is oriented to direct potential debris flows to the south of the area occupied by Residence A and B. The overall change in flow direction is approximately 27 degrees in more than 200 feet. As designed, the crest of the berm is a minimum of 15 feet (up to 18 feet) above the floor of the diversion channel, and the floor of the diversion channel is 30 feet wide. The width at the top of the channel is approximately 55 feet at its narrowest point and the southern channel bank is approximately 12 feet lower than the berm crest, with low-sloping or SE-sloping terrain south of the channel bank. This is expected to result in overflow to the south out of the diversion channel prior to overtopping of the berm.

Once the diversion berm has been constructed, the risk of debris flow impact to Residence A is thought to be "UNLIKELY" and the Downslope Public Safety Risk Level is "LOW" (Figure 6).

CONCLUSIONS

The Black Diamond Harvest Unit is located in T 1N, R 4W, Sections 28 and 29, on the east-facing slope of a ridge extending southeast from Gales Peak. The area is underlain by Tillamook Volcanics which, in the lower portion of the slope, have been intruded by mafic igneous rocks. Both the observations at the site and the stereographic review of historical aerial photographs indicate that portions of the harvest unit and surrounding area have been subject to large-scale, deep-seated slope movements since a long time prior to the first harvest of timber in the area in the late 1940s and early 1950s. These slope movements are expressed as mid-slope benches, some with adverse (west-facing) slopes at the top, bounded on the upslope side by steeper slope segments ("scarps"), and disruption of drainage and deflection of creeks.

The area within and around the harvest unit was divided into a total of five drainage basins, each with several tributaries. Basin 1, the southernmost drainage, discharges towards a house (Residence C) located off the fan for this drainage basin (not visited in the field). Residence A is located on an apparent debris fan originating at the mouth of Basin 5. The residence is located approximately 360 from the point of loss of confinement, but rock fragments up to 2 feet in large diameter were found in the immediate vicinity of the house. This indicates that, in the past, prior to timber harvest in this area, debris flows have reached the area of Residence A with sufficient energy to cause damage to the house, and possibly, injure the residents. Therefore, GeoScience determined that the Impact Rating for this residence is "Moderate", resulting in a Downslope Public Safety Risk Level of "Intermediate". There is little evidence to indicate that past debris flows have reached Residence B, but the natural deposits and system in this area was significantly modified during and following a slope movement of "overburden" down a small valley from the dump site of the quarry adjoining to the north and northwest. Therefore, statements regarding the possibility of impacts to House B are difficult. Nonetheless, this house appears to be located mostly off the higher-energy portion of the fan deposit.

Stimson Lumber Co., Forest Grove, Black Diamond Unit DFRA

Figure 5: Conceptual Debris Flow Diversion Berm Location (Houses A&B)

Not to Scale. Base from 1963 Aerial Photograph

GeoScience, Inc.

Stimson Lumber Co., Forest Grove, Black Diamond Unit DFRA

Figure 6: Downslope Public Safety Risk Level with Diversion Berm in Place

Not to Scale. Base from 1963 Aerial Photograph

GeoScience, Inc.

RECOMMENDATIONS

Based on discussions at the site, and with Stimson Lumber Co. personnel, it has been determined that the most ideal way to proceed is to construct a debris flow diversion berm and associated overflow channel to reduce the risk of debris flow impact to both Residences A and B. Whereas, the risk could also be reduced by leaving the portion of the Black Diamond Harvest Unit that is located on HLHL areas within Basin 5, the geologic evidence at the site indicates that debris flows have occurred prior to any timber harvest operations in this area. Therefore, not harvesting the HLHL areas will not significantly reduce the risk at least to Residence A.

Construction of a debris flow diversion berm on the upper portions of the debris fan will significantly reduce the risk of dangerous impacts to both Residence A and B. A conceptual berm design, including a 15-foot elevation differential between crest of berm and overflow channel and a 30-foot wide diversion channel is presented in Appendix D. The berm is designed to redirect the direction of moving debris flows by approximately 27 degrees over a distance of more than 200 feet. The diversion channel discharges to a low-lying area south of Residence A. The creek is kept along its current alignment by a low secondary dam transverse to the long axis of the berm, requiring an approximately 160-foot culvert through the berm.

LIMITATIONS

This report was prepared for Stimson Lumber Company and their authorized agents for use in the determination of risk for potential timber harvest sites. Our professional services were performed with the degree of skill and care typically exercised by similar firms in the area under similar budgetary constraints, and our recommendations were provided in accordance with generally accepted principles and practices. The analyses, conclusions, and recommendations in this report are based on site conditions observed during a reconnaissance level investigation and assume that the limited number of points investigated are generally representative of surface and subsurface conditions. No subsurface work was conducted during this investigation. GeoScience has reasonably relied upon client-furnished data, but we cannot be responsible for the accuracy of this information. If, in the future, conditions are found which differ significantly from those presented here, GeoScience must be advised at once so that these conditions and our recommendations can be reviewed and revised, if necessary. Should a substantial lapse of time occur between this investigation and future site activity, or if conditions have changed due to nearby construction or natural causes, the data contained in this report should be reviewed to determine its continued applicability. This report is not intended to provide a seismic risk evaluation of the subject property. GeoScience cannot be responsible for construction or forest management activity on other sites which neighbor or abut the subject property referenced in this report.

If you have any questions about this report, please do not hesitate to contact me at 607-5700.

Respectfully submitted,
GeoScience, Inc.

Gunnar Schlieder, Ph.D., CEG

APPENDIX A:

ODF Forest Practices Technical Note 2, Version 2.0

High Landslide Hazard Locations, Shallow, Rapidly Moving Landslides and Public Safety: Screening and Practices

Forest Practices Technical Note Number 2
Version 2.0

Effective January 1, 2003

Objective: Technical notes are written to help resource professionals, in this case, foresters or engineers responsible for planning harvest operations or road construction on steep slopes. This technical note is designed to help forest practices foresters, landowners, and operators screen forestlands prior to harvesting or road construction to identify locations subject to the Shallow, Rapidly Moving Landslides and Public Safety Rules (OAR 629-623-0000 through 0800). For operations identified by this screening process, Forest Practices Technical Note 6: *Determination of Rapidly Moving Landslide Impact Rating* may be used to determine public safety restrictions.

Background: Senate Bill 12 (1999) directed the Board of Forestry to adopt rules to replace a temporary prohibition of certain operations authorized by Senate Bill 1211 in 1997. The Shallow, Rapidly Moving Landslides and Public Safety rules are effective January 1, 2003. **This guidance supercedes *Version 1.0* of this note (from October 18, 2000).** This guidance is intended to apply to shallow, rapidly moving landslides, and should be applied with caution when evaluating the public safety risk associated with road fill failures, waste area failures, or deep seated landslides.

Initial screening of operations: The initial screen determines if there may be high landslide hazard locations within the operation area **and** if there may be structures or roads in the path of a potential shallow, rapidly moving landslide below the operation area (Figure 1).

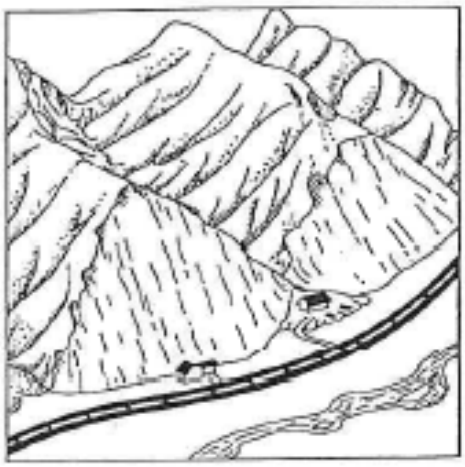

Figure 1. Homes and road in debris flow-prone locations (on a debris fan at the base of a debris torrent prone channel and at the base of a uniform steep slope).

The Oregon Department of Forestry will conduct the initial screen to determine if the shallow, rapidly moving landslides and public safety rules might apply to an operation. The results of the initial screen determine if further investigation is needed. Further investigation is needed (see pages 4-8 of this document) if both of the two following conditions exist:
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Figure 1 illustrates the typical conditions that should be identified by this screening process.

Slope steepness: The initial screen for slope steepness should use USGS 1:24,000 topographic maps, a ten-meter digital elevation model (DEM) based on these maps, or more accurate slope steepness information. Because USGS maps tend to underestimate actual slope steepness, map- or ten-meter DEM-determined slopes steeper than 65 percent for most of western Oregon, and 60 percent in the *Tyee Core Area* (described later in this Technical Note) are considered likely to have high landslide hazard locations in the field. Thirty-meter DEMs should not be used for screening, since they are very inaccurate.

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Terminology:

A ***debris fan*** is a deposit formed when a debris flow comes to rest. Fans are typically composed of poorly sorted boulders in soil and may also include woody material.

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The ***Tyee Core Area [629-600-0100(74)]*** is defined as "a location with geologic conditions including thick sandstone beds with few fractures. These sandstones weather rapidly and concentrate water in shallow soils creating a higher shallow, rapidly moving landslide hazard. The Tyee Core area is located within coastal watersheds from the Siuslaw watershed south to and including the Coquille watershed, and that portion of the Umpqua watershed north of Highway 42 and west of Interstate 5. Within these boundaries (as shown in Figure 2), locations where the bedrock is highly fractured or not of sedimentary origin, as determined in the field by a geotechnical specialist, are not subject to the Tyee Core area slope steepness thresholds." See Figure 2.

Figure 2. Location of the Tyee Core Area.

Overview of steps for determining necessary forest practices: For operations that meet the initial screen described earlier, further investigation using the five following steps is needed to determine if the operation is subject to the shallow, rapidly moving landslides and public safety rules, and to determine the required forest practices. Note that all operations containing high landslide hazard locations are subject to the rules for natural resource protection, regardless of whether the public safety rules also apply.

Step 1 - Determine the ***further review area*** for the operation. The further review area begins at high landslide hazard locations within the operation **and** continues down the channel or slope below the operation until that channel or slope cannot transport a shallow, rapidly moving landslide.

Part A - Identifying ***High Landslide Hazard Locations***
Part B - Identifying downslope extent of the ***Further Review Area***

Step 2 - Verify if there are structures or public roads below the operation area and in the further review area. If so, determine the ***Exposure Category*** for these structures or roads. If not, then the landslide and public safety rules do not apply. Apply natural resource forest practices rules.

Step 3 - Determine Rapidly Moving Landslide Impact Rating as ***extreme, serious, moderate***, or ***unlikely***.

Step 4 - Downslope Public Safety Risk is determined as ***Substantial, Intermediate, or Low***.

Step 5 - Harvesting and road building practices are regulated based on the Downslope Public Safety Risk Level determination.

STEP 1: DETERMINE THE FURTHER REVIEW AREA FOR THE OPERATION.

Part A - Identifying High Landslide Hazard Locations

Are there any high landslide hazard locations present within the proposed harvest unit or along the proposed road [629-623-0100(1)]?

A ***high landslide hazard location*** is a slope with characteristics (steepness, shape, and geology) that make it subject to shallow, rapidly moving landslides. Other landslides that are large and typically move more slowly, such as slumps and earthflows, are not *shallow, rapidly moving landslides*. A *shallow, rapidly moving landslide* begins as a relatively small landslide and moves at a velocity that is difficult for persons to outrun or escape. Note that high landslide hazard location identification is based on physical slope characteristics and is independent of proposed harvesting or road building practices.

High landslide hazard locations are specific sites that are subject to initiation of shallow, rapidly moving landslides. The specific criteria for determination of these sites is found in 629-623-0100 (3) as:

(a) The presence, as measured on site, of any slope in western Oregon (excluding competent rock outcrops) steeper than 80 percent, except in the Tyee Core Area, where it is any slope steeper than 75 percent; or

(b) The presence, as measured on site, of any headwall or draw in western Oregon steeper than 70 percent, except in the Tyee Core Area, where it is any headwall or draw steeper than 65 percent.

(c) Notwithstanding the slopes specified in (a) or (b) above, field identification of atypical conditions by a geotechnical specialist may be used to develop site specific slope steepness thresholds for any part of the state where the hazard is equivalent to (a) or (b) above.

Field Measurements: High landslide hazard locations are determined based on measurements of the steepest slopes on-the-ground. These field measurements may find slope conditions different from the initial screen, and take precedence over the screen. Short pitches of steep slopes that are less than 30 feet slope length in otherwise relatively gentle terrain are not

considered high landslide hazard locations. Constructed cutslopes are not considered high landslide hazard locations, but sidecast and other fillslopes are. Remember that clinometers do not give precise slope readings, so when slopes just under threshold criteria are measured with a clinometer, they may in fact be high landslide hazard locations.

Part B - Identifying downslope extent of the Further Review Area

Does the channel or slope have characteristics which are conducive to open-slope debris flow or debris torrent transport or deposition (part of the further review area)?

Open-slope debris flows typically slow down or stop when they encounter unconfined and relatively gentle slopes (wide valleys or benches). Debris torrents usually stop when they enter unconfined channels, low gradient stretches of channels, or debris fans.

For debris torrents, the further review area is 100 feet on each side of a confined channel. The further review area ends after any of the following conditions are encountered:
1. The average channel gradient becomes 6% or less for at least 300 feet.
2. The canyon width exceeds 200 feet or more for a distance of at least 300 feet. The width is generally measured at a height of 10 feet above the channel bottom.
3. The channel loses confinement (such as at the mouth of a canyon). The further review area extends 200 feet from the point where the channel loses confinement.

However, regardless of conditions described above, if there is field evidence of a *debris fan* at the mouth of the channel, the further review area continues to the lower edge of the debris fan.

For ***open-slope debris flows***, the further review area ends 100 feet downslope after slope gradient drops to and remains below 40 percent.

STEP 2: ARE THERE STRUCTURES OR PUBLIC ROADS IN THE FURTHER REVIEW AREA? IF SO, DETERMINE THE EXPOSURE CATEGORY.

On the ground, carefully look for structures or roads. Obtain permission from other landowners as needed. If these structures or public roads are within the further review area, determine the Exposure Category for the operation.

Exposure Categories are used to designate the likelihood of persons being present in structures or on public roads during periods when shallow, rapidly moving landslides may occur. When there are high landslide hazard locations within a proposed timber harvesting area or along a proposed road, operators must identify structures and paved public roads that might be at risk from rapidly moving landslides initiating within the operation area [629-623-0100(2)]. There are three exposure categories that can trigger the shallow, rapidly moving landslides and public safety rules, as described in OAR 629-623-0200(2)-(4).

Exposure Category A includes habitable residences, schools, and other buildings where people are normally present during periods when wet season rainstorms are common.

Exposure Category B includes paved public roads averaging over 500 vehicles per day, as determined, if possible, during periods when wet season rainstorms are common.

Exposure Category C includes barns, outbuildings, recreational dwellings not included in Exposure Category A, low-use public roads, and other constructed facilities where people are not usually present when wet season rainstorms are common.

Periods when wet season rainstorms are common generally means November 1st through April 30th. If the building is occupied during the winter, it is Exposure Category A. If a building is occupied mostly in the summer, it is Exposure Category C. Outbuildings, such as barns or detached garages, are not normally considered to be occupied buildings and are typically in Exposure Category C.

Evaluating traffic volume: The Oregon Department of Transportation has traffic volume data for state highways. In addition, many counties also have traffic use data available. Landowners may be able to conduct their own traffic counts, using standard traffic count methods. In the absence of traffic count data, double-lane, paved county and state roads are considered to be high traffic volume roads.

Special circumstances: Certain structures in the path of rapidly moving landslide that might fail upon impact and injure persons in structures or on roads further downstream are also considered by the rules. OAR 629-623-0250 (4) states that "the impact rating may include the potential for the failure of a structure in the direct path of a rapidly moving landslide resulting in a substantial risk of serious bodily injury or death to the exposed population below that structure". Such structures can include certain dams, power transmission towers, and industrial fuel tanks. An impact rating should also be conducted for these structures, as described in Technical Note 6.

STEP 3: DETERMINE THE IMPACT RATING.

Impact Ratings: OAR 629-623-0250(3) allows the State Forester to require the landowner to submit a geotechnical determination of shallow, rapidly moving landslide impact rating. A geotechnical determination of impact rating may be required for any structures or roads meeting Exposure Categories A, B, and in some special cases C, within the further review area below the operation. Landowners should consult with ODF before enlisting the services of a geotechnical specialist.

A geotechnical specialist, normally a licensed geotechnical engineer or engineering geologist, may conduct the geotechnical determination of rapidly moving landslide impact rating. Forest Practices Technical Note Number 6, *Determination of Rapidly Moving Landslide Impact Rating*, has been designed for these geotechnical determinations. After the operator has submitted the geotechnical report, the State Forester will review the final impact rating based on information provided in the geotechnical report. The State Forester has the final determination of the impact rating [629-623-0200(5)].

The impact rating identifies the relative risk of rapidly moving landslide impact to structures or roads where there may be a risk of serious bodily injury or death. The impact rating reflects the frequency and expected severity of impact from a rapidly moving landslide initiating within a

forest operation impacting any specific structure or road. Property damage alone is not considered in determination of impact rating.

Rapidly moving landslide impact potential is rated as ***unlikely, moderate, serious*** and, in limited cases, ***extreme*** (OAR 629-623-0250(2)).

Rapidly moving landslide impact rating definitions:

- **"Unlikely"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is unlikely to reach the structure or road.
- **"Moderate"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is likely to stop prior to the structure or road, or will not directly impact the structure or road. However, a moderate rating also indicates that dangerous impacts cannot be reasonably ruled out.
- **"Serious"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is likely to directly impact a structure or road.
- **"Extreme"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is likely to directly impact a structure or road and, in addition, there are unusual conditions that make dangerous impacts almost certain.

STEP 4: DETERMINE DOWNSLOPE PUBLIC SAFETY RISK LEVEL.

Downslope public safety risk levels are based on the exposure category (from Step 2) and the rapidly moving landslide impact rating (from Step 3). Downslope public safety risk level is characterized as either "substantial," "intermediate," or "low."

Table 1 is a matrix that shows how Exposure Category [OAR 629-600-0100(21), 0200(2)-(4)] and Rapidly Moving Landslide Impact Rating [OAR 629-623-0250(1), (2)] are used to determine Public Safety Risk Level [OAR 629-623-0300(1)].

Table 1. Downslope Public Safety Risk Levels

Exposure Category	Rapidly Moving Landslide Impact Rating			
	EXTREME	*SERIOUS*	*MODERATE*	*UNLIKELY*
A	Substantial	Substantial	Intermediate	Low
B	Substantial *	Intermediate	Low	Low
C	Intermediate *	Low	Low	Low

* When determined by the State Forester

STEP 5: DETERMINE THE ALLOWABLE HARVESTING AND ROAD BUILDING PRACTICES.

Substantial downslope public safety risk [629-623-0400 and 629-623-0450]: Prohibits all timber harvest and new roads on high landslide hazard locations (with some exceptions). Removal of dead or diseased trees, or trees on sites that have already failed and trees that have blown over can be allowed. The operator must demonstrate this operation results in no increased downslope public safety risk. Slopes must be protected from increased soil disturbance during harvesting and will be rapidly reforested.

Intermediate downslope public safety risk [629-623-0500 and 629-623-0550]: Requires that no more than half the high landslide hazard locations on a single ownership within the basin (for debris torrents) or hillslope (for open-slope debris flows) are in the 0 to 9 year age class or with otherwise reduced canopy closure in other age classes. This can allow for limited clearcutting. Thinning or partial cutting is allowed on all of the high landslide hazard locations to the extent that a healthy canopy is maintained during and after harvest. Given the variability of stand and site conditions across the state, setting a specific target (stems per acre, canopy closure, basal area, etc.) is difficult. The trees left after harvest should have healthy crowns and be capable of responding with rapid canopy and root regrowth after thinning. One acceptable strategy is to thin from below, retaining most of the dominant and co-dominant trees. The final density after thinning should be no lower than 30% of the maximum stand density index, with an increase in average tree diameter. This strategy, or any other thinning regime than recovers crown closure in ten years or less is acceptable.

Note that high-grading, selecting the largest trees for removal, will not result in rapid canopy closure, and is not an acceptable intermediate public safety risk practice. The long-term target is full evergreen canopy cover as a surrogate for winter water storage and fine root mass. Proposed silvicultural prescriptions in the required written plan will be evaluated in terms of their abilities to achieve that target. Thinning or partial cutting of predominately hardwood stands, unless it is done to encourage conifer growth or regrowth, is generally not considered an acceptable silvicultural practice for maintaining or enhancing canopy cover. Road construction operations require the operator to address in the written plan an evaluation of cutslope stability and other measures to prevent water from draining onto high landslide hazard locations. Generally, this will require operator-provided geotechnical specialist involvement.

Low downslope public safety risk [629-630-0500]: Harvesting and road building operations are not subject to restrictions for landslides and public safety. Natural resource protection rules apply to these operations, and also to any harvesting that might be allowed if there is Intermediate or Substantial Downslope Public Safety Risk. When harvesting on **any** high landslide hazard locations, operators must not construct skid roads or use ground-based equipment on these sites, and must ensure that log falling and yarding operations do not result in extensive disturbance or gouging.

Windthrow Considerations: Operators should be aware that windthrow may be a factor contributing to shallow, rapidly moving landslides. The operator should consider the wind firmness of trees that are to be left on high landslide hazard locations and will likely need to leave additional trees outside the boundaries of the unharvested area to reduce windthrow hazard to retained trees. Crown and bole characteristics, exposure to prevailing storm winds, topographic effects, relative height of trees, and species mix (conifer/hardwood) should be evaluated when determining harvest unit boundaries when high landslide hazard locations are present. Removal of trees that can impact structures or roads can be allowed if the risk to these homes or roads from windthrow is greater than the risk from shallow, rapidly moving landslides.

Administration of the Shallow, Rapidly Moving Landslides and Public Safety Rules: The Department of Forestry will evaluate Notifications of Operations for applicability of the Shallow, Rapidly Moving Landslides and Public Safety Rules. Operators will be informed if there may be high landslide hazard locations within the operation area. It is the operators' responsibility to then use this technical note to confirm the high landslide hazard locations, and to identify the

presence of structures and paved public roads within the further review area. It is also the operators' responsibility to obtain geotechnical services for determination of the Impact Rating for the operation. After the operator has submitted the geotechnical report, the State Forester will review the final impact rating based on information provided in the geotechnical report. The State Forester has the final determination of the impact rating. Oregon Department of Forestry geotechnical specialists are available to assist forest practices foresters as needed.

Written Plan Requirements: For operations with substantial or intermediate public safety risk, the operator must submit a written plan (OAR 629-623-0700) that includes:

- A determination of public safety risk based on the impact rating for the operation;
- A map showing those portion(s) of the operation containing high landslide hazard locations;
- The location of all existing and proposed new roads crossing high landslide hazard locations;
- A detailed road design for all new or reconstructed roads crossing high landslide hazard locations;
- The location of habitable structures (Exposure Category A) and paved public roads (Exposure Category B) below the operation and within further review areas;
- Locations where timber harvesting will not occur;
- Locations where partial cutting will occur and the specific silvicultural prescription; and
- Additional information related to the operation, as requested by the State Forester.

Limitations: These criteria, and the forest practice rules that apply to other forest operations, are intended to minimize disturbances to high landslide hazard locations, but do not eliminate downslope risks. Shallow, rapidly moving landslides occur in both forested and non-forested areas alike. The shallow, rapidly moving landslide rules do not eliminate the landslide threat to downslope occupied buildings or high traffic volume roads. Less steep slopes may still be subject to a lower landslide hazard, and there are also other types of landslides that may pose a threat to public safety.

Sources of More Detailed Technical Information:

Benda, L., and T. Cundy. 1990. Predicting deposition of debris flows in mountain channels. Canadian Geotechnical Journal. Volume 27, Number 4. pp 409-417.

Mills, K. & Hinkle, J. 2001. Landslides and Public Safety: an Issue Paper prepared for the Oregon Board of Forestry. Oregon Department of Forestry.

Oregon Department of Forestry 2003. Forest Practices Technical Note Number 6; Determination of Rapidly Moving Landslide Impact Rating.

Robison, E. G., K. Mills, J. T. Paul, L. Dent, and A. Skaugset. 1999. Oregon Department of Forestry 1996 Storm Impacts Monitoring Project: Final Report. Forest Practices Technical Report #4. Oregon Department of Forestry, Salem, Oregon. 141 pp.

APPENDIX B:

Clean Portions of 1963 Air Photo Stereo Pair

APPENDIX C:

Selected Site Photos

View WNW to residences A (L) and B (R) and harvest unit above. Note house A on fan-shaped land form, house B beyond right edge of this feature. Also note quarry above house on R.

Cut bank behind house A. View SW. The next picture is taken on slope below shed.

Closer view of fan-shaped landform with houses A and B.

GeoScience, Inc.

(541) 607-5700

Stimson Lumber Co., Forest Grove, Black Diamond DFRA

Rock fragments dug from garden area in fore- and middle ground. House A in back. View N.

Igneous rock fragments in cut bank directly upslope of House A. Sandvik for scale.

Closer view of appr. 2-ft. rock fragment at stump in picture above on R.

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Appendix D

Conceptual Debris Flow Diversion Berm Design

N
To House A
Approx. 40'
Water Intake
Culvert
Berm Crest
Creek Berm
Diversion
Channel
Existing contours shown in thin lines. Proposed embankment contours shown in thick lines and cut contours shown in thick dashed lines.
Note: Topography determined from sections measured by Simson using clinometer and tape/stringbox.
Stimson Lumber, Black Diamond Unit, Forest Grove
Conceptual Debris Flow Diversion Berm Design
Scale 1" = 41.4, North Arrow Approximate
GeoScience, Inc.

Forest Practices Technical Note Number 2

Version 2.0

High Landslide Hazard Locations, Shallow, Rapidly Moving Landslides and Public Safety: Screening and Practices

Effective January 1, 2003

Edited January 24, 2019 to recognize updated rule references

Objective

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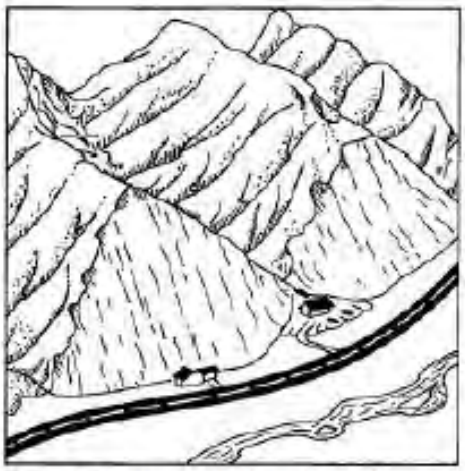

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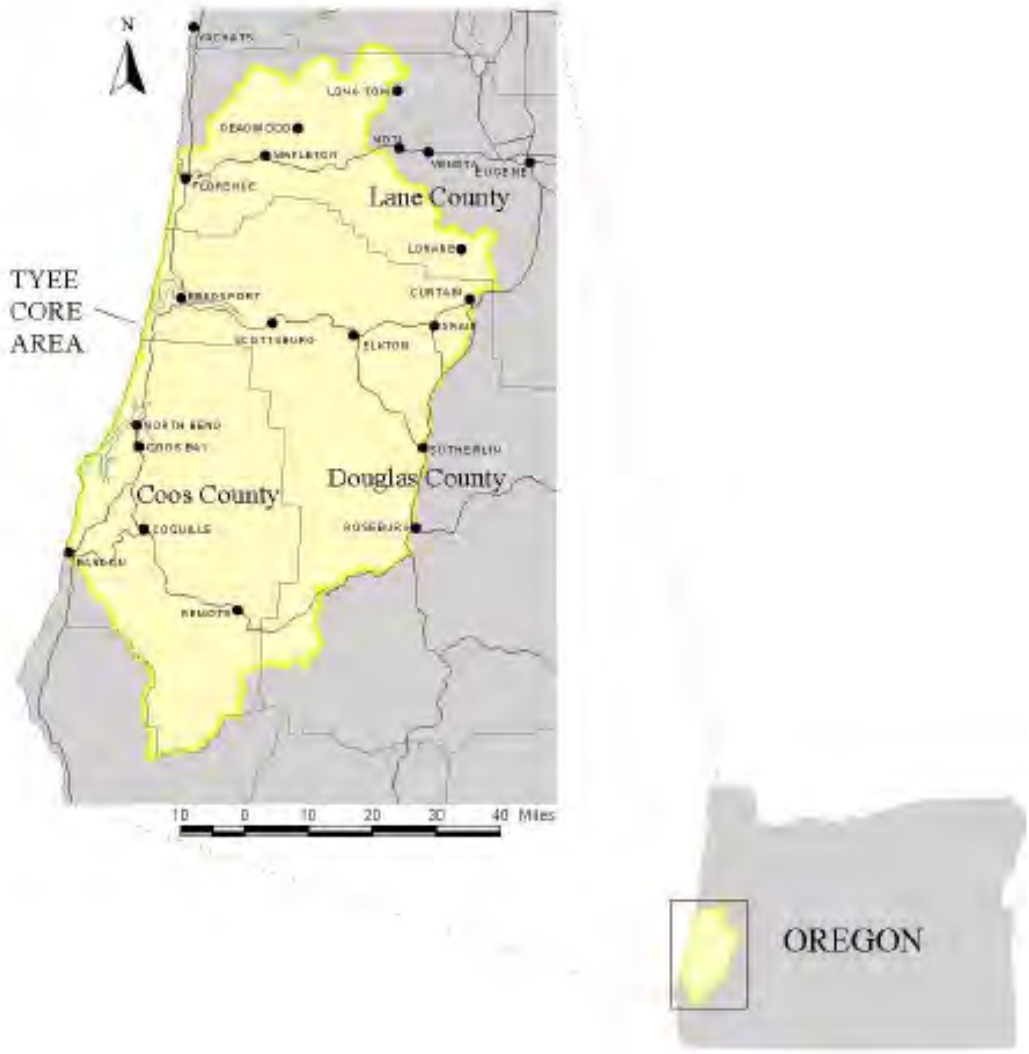

Figure 2. Location of the Tyee Core Area.

Overview of steps for determining necessary forest practices

For operations that meet the initial screen described earlier, further investigation using the five following steps is needed to determine if the operation is subject to the shallow, rapidly moving landslides and public safety rules, and to determine the required forest practices. Note that all operations containing high landslide hazard locations are subject to the rules for natural resource protection, regardless of whether the public safety rules also apply.

Step 1 - Determine the ***further review area*** for the operation. The further review area begins at high landslide hazard locations within the operation **and** continues down the channel or slope below the operation until that channel or slope cannot transport a shallow, rapidly moving landslide.

Part A - Identifying ***High Landslide Hazard Locations***

Part B - Identifying downslope extent of the ***Further Review Area***

Step 2 - Verify if there are structures or public roads below the operation area and in the further review area. If so, determine the ***Exposure Category*** for these structures or roads. If not, then the landslide and public safety rules do not apply. Apply natural resource forest practices rules.

Step 3 - Determine Rapidly Moving Landslide Impact Rating as ***extreme***, ***serious***, ***moderate***, or ***unlikely***.

Step 4 - Downslope Public Safety Risk is determined as ***Substantial, Intermediate, or Low***.

Step 5 - Harvesting and road building practices are regulated based on the Downslope Public Safety Risk Level determination.

STEP 1: DETERMINE THE FURTHER REVIEW AREA FOR THE OPERATION

Part A - Identifying High Landslide Hazard Locations

Are there any high landslide hazard locations present within the proposed harvest unit or along the proposed road [629-623-0100(1)]?

A ***high landslide hazard location*** is a slope with characteristics (steepness, shape, and geology) that make it subject to shallow, rapidly moving landslides. Other landslides that are large and typically move more slowly, such as slumps and earthflows, are not *shallow, rapidly moving landslides*. A *shallow, rapidly moving landslide* begins as a relatively small landslide and moves at a velocity that is difficult for persons to outrun or escape. Note that high landslide hazard location identification is based on physical slope characteristics and is independent of proposed harvesting or road building practices.

High landslide hazard locations are specific sites that are subject to initiation of shallow, rapidly moving landslides. The specific criteria for determination of these sites is found in 629-623-0100 (3) as:

(a) The presence, as measured on site, of any slope in western Oregon (excluding competent rock outcrops) steeper than 80 percent, except in the Tyee Core Area, where it is any slope steeper than 75 percent; or

(b) The presence, as measured on site, of any headwall or draw in western Oregon steeper than 70 percent, except in the Tyee Core Area, where it is any headwall or draw steeper than 65 percent.

(c) Notwithstanding the slopes specified in (a) or (b) above, field identification of atypical conditions by a geotechnical specialist may be used to develop site specific slope steepness thresholds for any part of the state where the hazard is equivalent to (a) or (b) above.

Field Measurements: High landslide hazard locations are determined based on measurements of the steepest slopes on-the-ground. These field measurements may find slope conditions different from the initial screen, and take precedence over the screen. Short pitches of steep slopes that are less than 30 feet slope length in otherwise relatively gentle terrain are not considered high landslide hazard locations. Constructed cutslopes are not considered high landslide hazard locations, but sidecast and other fillslopes are. Remember that clinometers do not give precise slope readings, so when slopes just under threshold criteria are measured with a clinometer, they may in fact be high landslide hazard locations.

Part B - Identifying downslope extent of the Further Review Area

Does the channel or slope have characteristics which are conducive to open-slope debris flow or debris torrent transport or deposition (part of the further review area)?

Open-slope debris flows typically slow down or stop when they encounter unconfined and relatively gentle slopes (wide valleys or benches). Debris torrents usually stop when they enter unconfined channels, low gradient stretches of channels, or debris fans.

For debris torrents, the further review area is 100 feet on each side of a confined channel. The further review area ends after any of the following conditions are encountered:

1. The average channel gradient becomes 6% or less for at least 300 feet.
2. The canyon width exceeds 200 feet or more for a distance of at least 300 feet. The width is generally measured at a height of 10 feet above the channel bottom.
3. The channel loses confinement (such as at the mouth of a canyon). The further review area extends 200 feet from the point where the channel loses confinement.

However, regardless of conditions described above, if there is field evidence of a *debris fan* at the mouth of the channel, the further review area continues to the lower edge of the debris fan.

For ***open-slope debris flows***, the further review area ends 100 feet downslope after slope gradient drops to and remains below 40 percent.

STEP 2: ARE THERE STRUCTURES OR PUBLIC ROADS IN THE FURTHER REVIEW AREA? IF SO, DETERMINE THE EXPOSURE CATEGORY.

On the ground, carefully look for structures or roads. Obtain permission from other landowners as needed. If these structures or public roads are within the further review area, determine the Exposure Category for the operation.

Exposure Categories are used to designate the likelihood of persons being present in structures or on public roads during periods when shallow, rapidly moving landslides may occur. When there are high landslide hazard locations within a proposed timber harvesting area or along a proposed road, operators must identify structures and paved public roads that might be at risk from rapidly moving landslides initiating within the operation area [629-623-0100(2)]. There

are three exposure categories that can trigger the shallow, rapidly moving landslides and public safety rules, as described in OAR 629-623-0200(2)-(4).

Exposure Category A includes habitable residences, schools, and other buildings where people are normally present during periods when wet season rainstorms are common.

Exposure Category B includes paved public roads averaging over 500 vehicles per day, as determined, if possible, during periods when wet season rainstorms are common.

Exposure Category C includes barns, outbuildings, recreational dwellings not included in Exposure Category A, low-use public roads, and other constructed facilities where people are not usually present when wet season rainstorms are common.

Periods when wet season rainstorms are common generally means November 1 through April 30. If the building is occupied during the winter, it is Exposure Category A. If a building is occupied mostly in the summer, it is Exposure Category C. Outbuildings, such as barns or detached garages, are not normally considered to be occupied buildings and are typically in Exposure Category C.

Evaluating traffic volume: The Oregon Department of Transportation has traffic volume data for state highways. In addition, many counties also have traffic use data available. Landowners may be able to conduct their own traffic counts, using standard traffic count methods. In the absence of traffic count data, double-lane, paved county and state roads are considered to be high traffic volume roads.

Special circumstances: Certain structures in the path of rapidly moving landslide that might fail upon impact and injure persons in structures or on roads further downstream are also considered by the rules. OAR 629-623-0250 (4) states that "the impact rating may include the potential for the failure of a structure in the direct path of a rapidly moving landslide resulting in a substantial risk of serious bodily injury or death to the exposed population below that structure". Such structures can include certain dams, power transmission towers, and industrial fuel tanks. An impact rating should also be conducted for these structures, as described in Technical Note 6.

STEP 3: DETERMINE THE IMPACT RATING.

Impact Ratings: OAR 629-623-0250(3) allows the State Forester to require the landowner to submit a geotechnical determination of shallow, rapidly moving landslide impact rating. A geotechnical determination of impact rating may be required for any structures or roads meeting Exposure Categories A, B, and in some special cases C, within the further review area below the operation. Landowners should consult with ODF before enlisting the services of a geotechnical specialist.

A geotechnical specialist, normally a licensed geotechnical engineer or engineering geologist, may conduct the geotechnical determination of rapidly moving landslide impact rating. Forest Practices Technical Note Number 6, *Determination of Rapidly Moving Landslide Impact Rating,*

has been designed for these geotechnical determinations. After the operator has submitted the geotechnical report, the State Forester will review the final impact rating based on information provided in the geotechnical report. The State Forester has the final determination of the impact rating [629-623-0250(5)].

The impact rating identifies the relative risk of rapidly moving landslide impact to structures or roads where there may be a risk of serious bodily injury or death. The impact rating reflects the frequency and expected severity of impact from a rapidly moving landslide initiating within a forest operation impacting any specific structure or road. Property damage alone is not considered in determination of impact rating.

Rapidly moving landslide impact potential is rated as ***unlikely, moderate, serious*** and, in limited cases, ***extreme*** (OAR 629-623-0250(2)).

Rapidly moving landslide impact rating definitions:

- **"Unlikely"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is unlikely to reach the structure or road.
- **"Moderate"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is likely to stop prior to the structure or road, or will not directly impact the structure or road. However, a moderate rating also indicates that dangerous impacts cannot be reasonably ruled out.
- **"Serious"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is likely to directly impact a structure or road.
- **"Extreme"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is likely to directly impact a structure or road and, in addition, there are unusual conditions that make dangerous impacts almost certain.

STEP 4: DETERMINE DOWNSLOPE PUBLIC SAFETY RISK LEVEL.

Downslope public safety risk levels are based on the exposure category (from Step 2) and the rapidly moving landslide impact rating (from Step 3). Downslope public safety risk level is characterized as either "substantial," "intermediate," or "low."

Table 1 is a matrix that shows how Exposure Category [OAR 629-600-0100(21), 0200(2)-(4)] and Rapidly Moving Landslide Impact Rating [OAR 629-623-0250(1), (2)] are used to determine Public Safety Risk Level [OAR 629-623-0300(1)].

Table 1. Downslope Public Safety Risk Levels

Exposure Category	Rapidly Moving Landslide Impact Rating			
	EXTREME	*SERIOUS*	*MODERATE*	*UNLIKELY*
A	Substantial	Substantial	Intermediate	Low
B	Substantial *	Intermediate	Low	Low
C	Intermediate *	Low	Low	Low

* When determined by the State Forester

STEP 5: DETERMINE THE ALLOWABLE HARVESTING AND ROAD BUILDING PRACTICES.

Substantial downslope public safety risk [629-623-0400 and 629-623-0450]: Prohibits all timber harvest and new roads on high landslide hazard locations (with some exceptions). Removal of dead or diseased trees, or trees on sites that have already failed and trees that have blown over can be allowed. The operator must demonstrate this operation results in no increased downslope public safety risk. Slopes must be protected from increased soil disturbance during harvesting and will be rapidly reforested.

Intermediate downslope public safety risk [629-623-0500 and 629-623-0550]: Requires that no more than half the high landslide hazard locations on a single ownership within the basin (for debris torrents) or hillslope (for open-slope debris flows) are in the 0 to 9 year age class or with otherwise reduced canopy closure in other age classes. This can allow for limited clearcutting. Thinning or partial cutting is allowed on all of the high landslide hazard locations to the extent that a healthy canopy is maintained during and after harvest. Given the variability of stand and site conditions across the state, setting a specific target (stems per acre, canopy closure, basal area, etc.) is difficult. The trees left after harvest should have healthy crowns and be capable of responding with rapid canopy and root regrowth after thinning. One acceptable strategy is to thin from below, retaining most of the dominant and co-dominant trees. The final density after thinning should be no lower than 30% of the maximum stand density index, with an increase in average tree diameter. This strategy, or any other thinning regime than recovers crown closure in ten years or less is acceptable.

Note that high-grading, selecting the largest trees for removal, will not result in rapid canopy closure, and is not an acceptable intermediate public safety risk practice. The long-term target is full evergreen canopy cover as a surrogate for winter water storage and fine root mass. Proposed silvicultural prescriptions in the required written plan will be evaluated in terms of their abilities to achieve that target. Thinning or partial cutting of predominately hardwood stands, unless it is done to encourage conifer growth or regrowth, is generally not considered an acceptable silvicultural practice for maintaining or enhancing canopy cover. Road construction operations require the operator to address in the written plan an evaluation of cutslope stability and other measures to prevent water from draining onto high landslide hazard locations. Generally, this will require operator-provided geotechnical specialist involvement.

Low downslope public safety risk [629-630-0500]: Harvesting and road building operations are not subject to restrictions for landslides and public safety. Natural resource protection rules apply to these operations, and also to any harvesting that might be allowed if there is Intermediate or Substantial Downslope Public Safety Risk. When harvesting on **any** high landslide hazard locations, operators must not construct skid roads or use ground-based equipment on these sites, and must ensure that log falling and yarding operations do not result in extensive disturbance or gouging.

Windthrow Considerations

Operators should be aware that windthrow may be a factor contributing to shallow, rapidly moving landslides. The operator should consider the wind firmness of trees that are to be left

on high landslide hazard locations and will likely need to leave additional trees outside the boundaries of the unharvested area to reduce windthrow hazard to retained trees. Crown and bole characteristics, exposure to prevailing storm winds, topographic effects, relative height of trees, and species mix (conifer/hardwood) should be evaluated when determining harvest unit boundaries when high landslide hazard locations are present. Removal of trees that can impact structures or roads can be allowed if the risk to these homes or roads from windthrow is greater than the risk from shallow, rapidly moving landslides.

Administration of the Shallow, Rapidly Moving Landslides and Public Safety Rules

The Department of Forestry will evaluate Notifications of Operations for applicability of the Shallow, Rapidly Moving Landslides and Public Safety Rules. Operators will be informed if there may be high landslide hazard locations within the operation area. It is the operators' responsibility to then use this technical note to confirm the high landslide hazard locations, and to identify the presence of structures and paved public roads within the further review area. It is also the operators' responsibility to obtain geotechnical services for determination of the Impact Rating for the operation. After the operator has submitted the geotechnical report, the State Forester will review the final impact rating based on information provided in the geotechnical report. The State Forester has the final determination of the impact rating. Oregon Department of Forestry geotechnical specialists are available to assist forest practices foresters as needed.

Written Plan Requirements

For operations with substantial or intermediate public safety risk, the operator must submit a written plan (OAR 629-623-0700) that includes:

- A determination of public safety risk based on the impact rating for the operation;
- A map showing those portion(s) of the operation containing high landslide hazard locations;
- The location of all existing and proposed new roads crossing high landslide hazard locations;
- A detailed road design for all new or reconstructed roads crossing high landslide hazard locations;
- The location of habitable structures (Exposure Category A) and paved public roads (Exposure Category B) below the operation and within further review areas;
- Locations where timber harvesting will not occur;
- Locations where partial cutting will occur and the specific silvicultural prescription; and
- Additional information related to the operation, as requested by the State Forester.

Limitations

These criteria, and the forest practice rules that apply to other forest operations, are intended to minimize disturbances to high landslide hazard locations, but do not eliminate downslope risks. Shallow, rapidly moving landslides occur in both forested and non-forested areas alike. The shallow, rapidly moving landslide rules do not eliminate the landslide threat to downslope occupied buildings or high traffic volume roads. Less steep slopes may still be subject to a

lower landslide hazard, and there are also other types of landslides that may pose a threat to public safety.

Sources of More Detailed Technical Information

Benda, L., and T. Cundy. 1990. Predicting deposition of debris flows in mountain channels. Canadian Geotechnical Journal. Volume 27, Number 4. pp 409-417.

Mills, K. & Hinkle, J. 2001. Landslides and Public Safety: an Issue Paper prepared for the Oregon Board of Forestry. Oregon Department of Forestry.

Oregon Department of Forestry 2003. Forest Practices Technical Note Number 6; Determination of Rapidly Moving Landslide Impact Rating.

Robison, E. G., K. Mills, J. T. Paul, L. Dent, and A. Skaugset. 1999. Oregon Department of Forestry 1996 Storm Impacts Monitoring Project: Final Report. Forest Practices Technical Report #4. Oregon Department of Forestry, Salem, Oregon. 141 pp.

Oregon Department of Forestry Field Offices

For more information about the Oregon Forest Practices Act or the Forest Practice Rules, please contact your local Oregon Department of Forestry office which can be found at http://www.oregon.gov/ODF/Working/Pages/FindAForester.aspx *or the headquarters office at 2600 State Street, Salem, Oregon 97310. 503-945-7200.*

Forest Practices Technical Note Number 6

Version 1.0

Determination of Rapidly Moving Landslide Impact Rating

September 1, 2003

Purpose

This technical note is intended to help a geotechnical specialist determine the rapidly moving landslide impact rating(s) for a proposed forest operation. The impact rating categorizes the potential for serious bodily injury or death due to shallow, rapidly moving landslide impact to structures or vehicles. The geotechnical specialist should note that the focus of the impact rating determination is on the geomorphic characteristics of the hillslope or channel that influence debris flow transport and deposition.

Regulatory Framework

Policy and authority for protection of the public from landslide hazards is found in 1999 Senate Bill 12. The Shallow, Rapidly Moving Landslide and Public Safety Rules, OAR 629-623-0000 through 0800, became effective January 1, 2003. Forest Practices Technical Note 2, version 2.0, provides a summary of administration and application of the Landslides and Public Safety Rules and outlines how operations can be screened for high landslide hazard locations and exposed structures and roads. Proposed forest operations identified with a potential to affect the risk to public safety from rapidly moving landslides must be evaluated. Determination of the public safety risk level and the corresponding rules that apply to a forest operation requires a number of steps. This document provides technical guidance specifically for completing one of those steps, determining the rapidly moving landslide impact rating (OAR 629-623-0250). This determination should be based on site specific field observations, measurements, and professional judgement.

When combined with exposure categories, impact ratings are intended to prevent forest practices that increase public safety risk to levels greater than the substantial risk determined by Board of Forestry. However, in many cases, the natural risk for structures or roads will be well above the substantial risk level. The Shallow, Rapidly Moving Landslides and Public Safety Rules can keep the risk from becoming even greater (at least in the short-term), but cannot reduce the background risk, so people in these locations remain at substantial risk of serious bodily injury or death, regardless of forest practices regulations and the resulting upslope forest practices.

Table 1 is a matrix that shows how the *Exposure Category* (OAR 629-623-0200) and the *Rapidly Moving Landslide Impact Rating* (OAR 629-623-0250) are used to determine the *Public Safety Risk Level* (OAR 629-623-300). Most forest operations are prohibited if the downslope public

safety risk is substantial. There are significant restrictions on operations if the downslope public safety risk is intermediate.

Table 1. Public Safety Risk Levels

Exposure Category	Rapidly Moving Landslide Impact Rating			
	EXTREME	*SERIOUS*	*MODERATE*	*UNLIKELY*
A	Substantial	Substantial	Intermediate	Low
B	Substantial*	Intermediate	Low	Low
C	Intermediate*	Low	Low	Low

*** if site specific conditions warrant as determined by the State Forester**

Terminology

A ***debris fan*** is a deposit formed as a debris flow comes to rest. Debris fans are typically located at the mouth of a canyon or anywhere else a channel loses confinement. They can also be located at the base of a steep slope. Debris fans typically consist of an unsorted deposit of fines, sand, and gravel, as well as boulders and wood debris.

A ***debris flow*** is a rapidly moving slurry of rock, soil, wood and water that can travel hundreds to thousands of feet on steep slopes or in steep channels. There are two types of debris flows, open-slope debris flows and debris torrents.

> An ***open-slope debris flow*** is a debris flow that never enters a confined channel. They travel tens to hundreds of feet from the initiating high landslide hazard location and typically deposit on gentler lower slopes or at the base of consistently steep slopes.
>
> Once a debris flow enters a confined channel, it is considered a ***debris torrent,*** or a channelized debris flow. ***Debris torrents*** often entrain channel materials along channel reaches with steep gradients, leaving in place rock exposed in channel beds and along channel banks. Debris torrents can increase in size by several orders of magnitude and travel hundreds or thousands of feet beyond the site of initial failure. Wood material and water can affect how far they travel on relatively low channel gradients. Terminal deposition is often related to geomorphic factors like channel confinement, channel gradient, and channel junctions.

Exposure categories [OAR 629-600-0100 (21)] are used to designate the likelihood of persons being present in structures or on public roads during periods when shallow, rapidly moving landslides may occur.

Headwalls are concave slopes (as seen in plan view) that can concentrate water to increase landslide susceptibility. Headwalls are typically located at the heads of channels or swales. Landslides occurring in these locations are more likely to move as debris flows than landslides that initiate in other areas of the slope.

A ***high landslide hazard location*** [OAR 629-600-0100 (31)] is a specific site that is subject to initiation of a shallow, rapidly moving landslide. Specific criteria for identification of high landslide hazard locations are described later in this note.

A ***shallow, rapidly moving landslide*** [629-600-0100 (61)] is any detached mass of soil, rock, or debris that begins as a relatively small landslide on steep slopes and grows to a sufficient size to cause damage as it moves down a slope or stream channel at a velocity difficult for people to outrun or escape. Shallow, rapidly moving landslides are the most common type of landslide associated with forest practices. Robison et al. (1999) found that the typical initiating landslide that occurs on high landslide hazard locations is 40 feet long, 30 feet wide, 3 feet deep and has a planar failure surface.

The ***Tyee Core Area*** [629-600-0100 (74)] is a location with geologic conditions including thick sandstone beds with few fractures. These sandstones weather rapidly and concentrate water in shallow soils creating a higher shallow, rapidly moving landslide hazard. The Tyee Core Area is located within coastal watersheds from the Siuslaw watershed south to and including the Coquille watershed, and that portion of the Umpqua watershed north of Highway 42 and west of Interstate 5. Within these boundaries, locations where the bedrock is highly fractured or not of sedimentary origin, as determined in the field by a geotechnical specialist, are not subject to the Tyee Core area slope steepness thresholds.

Determination of Substantial Risk

The risk of rapidly moving landslide-related fatalities in Oregon was assessed (Mills and Hinkle, 2001). According to historical records, there have been at least 25 fatalities attributed to rapidly moving landslides in Oregon since 1890. Since 1950, the rapidly moving landslide related fatality rate has averaged about one fatality every five years for the entire population of Oregon. The risk of being killed by a rapidly moving landslide in Oregon for the average citizen is relatively low, about 0.02 fatalities per 100,000 people per year. However, the risk can be several orders of magnitude greater, up to 70 fatalities per 100,000 people per year, for small segments of the population known to be living, working, or traveling through locations with the greatest shallow, rapidly moving landslide hazard. The risk to any individual depends in part on the exposure, determined by how much time they spend in these locations. Note that of the 25 known fatalities, 15 occurred within the Tyee Core Area.

The Oregon Board of Forestry defined "substantial risk" as one death per 100,000 people per year from rapidly moving landslides for the populace most at risk. If the background risk is greater than one death per 100,000 people at risk per year, the risk is considered to be substantial. If it is close to one death per 100,000 people per year, it is considered to be intermediate.

Impact Ratings

The impact rating identifies the relative risk of serious bodily injury or death due to rapidly moving landslide impact to structures or roads. Property damage alone is not considered in

determination of impact rating, unless such damage is of such severity where serious injury or death to those inside the structure or vehicle can reasonably be expected. The impact rating reflects both the suspected frequency and expected severity of impact.

Rapidly moving landslide impact potential is rated as **unlikely, moderate, serious** and, in limited cases, **extreme,** as described below.

- **"Unlikely"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is unlikely to directly impact a structure or road.
- **"Moderate"** impact rating indicates that it is uncertain whether any shallow, rapidly moving landslide initiating within the operation area is likely or unlikely to directly impact a structure or road.
- **"Serious"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is likely to directly impact a structure or road.
- **"Extreme"** indicates that any shallow, rapidly moving landslide initiating within the operation area is likely to directly impact a structure or road. In addition, there are unusual conditions that make dangerous impacts almost certain, such as a structure or road located in the transport zone of a potential debris torrent.

DETERMINATION OF IMPACT RATING

Documentation of the geotechnical determination of impact rating(s) [OAR 629-623-0250(3)] should include data and observations supporting that impact rating. Individual sites within an operation may have different impact ratings. Behavior of shallow, rapidly moving landslides is complex, depending on the interaction of many factors. **Geomorphic characteristics which may influence initiation, transport and deposition of shallow, rapidly moving landslides are discussed below; the geotechnical specialist may determine there are additional or other factors controlling the impact rating which are not presented below.** After the geotechnical specialist has submitted information and their impact rating determination, the State Forester will review the impact rating and make the final determination (OAR 629-623-0250(5)).

Shallow, rapidly moving landslides

The path of a shallow, rapidly moving landslide can be broken into three main phases (Figure 1):

I. Initiation (high landslide hazard location);

II. Transport (ability of a slope or channel to transport a rapidly moving landslide); and

III. Deposition (terminal deposition of a rapidly moving landslide).

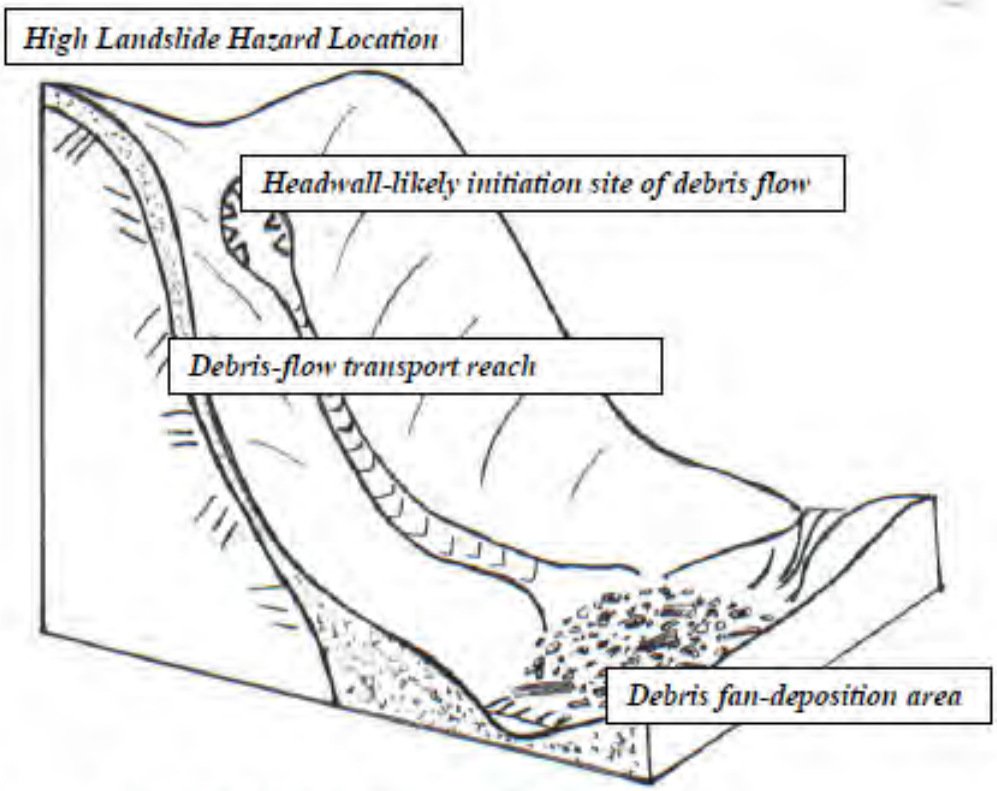

Figure 1. Debris flow initiation, transport, and depositi

I. INITIATION - HIGH LANDSLIDE HAZARD LOCATIONS

Specific criteria for determination of high landslide hazard locations are described in OAR 629-623-0100(3) and are further described in Forest Practices Technical Note 2, version 2.0. The criteria are:

(a) The presence, as measured on site, of any slope in western Oregon (excluding competent rock outcrops) steeper than 80 percent, except in the Tyee Core Area, where it is any slope steeper than 75 percent; or

(b) The presence, as measured on site, of headwalls or draws in western Oregon steeper than 70 percent, except in the Tyee Core Area, where the headwall or draw slope is steeper than 65 percent.

(c) Notwithstanding the slopes specified in (a) or (b) above, field identification of atypical conditions by a geotechnical specialist may be used to develop site specific slope steepness thresholds for any part of the state so that the hazard is equivalent to (a) or (b) above. The State Forester shall make the final determination of equivalent hazard.

Atypical Conditions: The definition of high landslide hazard locations assumes homogenous geologic and subsurface conditions. Section (c) recognizes that there are site-specific characteristics, which may give the geotechnical specialist reason to modify the slope thresholds in Sections (a) or (b). For example, slope thresholds might be adjusted to be steeper

on a site in the Cascade Range with a well-drained talus slope. Conversely, evidence of slope instability, such as actively failing slopes, may justify the decision to lower the slope thresholds. There are several factors which may influence initiation hazard such as soil depth, soil material properties, slope shape, vegetative characteristics, bedrock characteristics, subsurface water flow, and others. The geotechnical specialist will have to present supporting evidence to demonstrate that modification of the standard slope thresholds is appropriate for the specific site.

Standard measurements and observations: Slope steepness of the high landslide hazard location should be measured on-site. Short pitches of steep slopes that are generally less than 30 feet slope length in otherwise relatively gentle terrain are not considered high landslide hazard locations. Constructed cut slopes are not considered high landslide hazard locations. Sidecast and fill slopes are considered high landslide hazard locations only if they meet both the slope steepness and slope length criteria. Slope measurements up and down the slope should be averaged to determine actual slope steepness if slopes are very close to high landslide hazard location thresholds. Slopes that appear planar or convex in plan view should be considered uniform. Slopes that appear concave in plan view should be considered a headwall or draw.

II. TRANSPORT

The characteristics of transport and deposition are different for the two types of shallow, rapidly moving landslides. Structures and paved roads located very near the base of a steep slope with high landslide hazard locations are most at risk for open-slope debris flows. Structures and roads located within or near confined channels or canyons are most at risk from debris torrents. The following characteristics are known or thought to influence transport and deposition of open-slope debris flows and debris torrents. The geotechnical specialist should investigate these factors, where applicable, and use them to determine the rapidly moving landslide impact rating(s) for the proposed forest operation.

Open-Slope Debris Flows: Open-slope debris flows are controlled primarily by slope steepness. Open-slope debris flows can travel tens to hundreds of feet on steep slopes, but deposition is expected to begin on slopes of 40% or less. Open-slope debris flows commonly deposit at the base of steep slopes, but may also deposit on mid-slope benches, usually of 50-foot slope distance or more. Benda (1999) has developed a combined theoretical-empirical model for predicting landslide runout on open-slopes.

Hillslope steepness and the presence and width of mid-slope benches between the high landslide hazard location(s) and the structure or road should be measured on site and included in the geotechnical report.

Debris torrents: Channel confinement, gradient, and junction angles exhibit the most control over debris torrent transport and deposition. However, other factors such as the amount and type of material available to be entrained, the potential energy available, and obstructions or barriers can affect debris torrent transport and deposition.

Channel junction angles: Benda and Cundy (1990) developed a simple empirical model for predicting debris torrent deposition based on channel junction angles and channel gradient. Channel junction angles of 70 degrees or greater were found to predict deposition of most debris torrents, as long as the channel gradient of the receiving channel has a gradient of 36 percent or less. Robison et al. (1999) validated the Benda-Cundy model with their study of 361 debris torrents. Methods for determining a junction angle can be found in Benda and Cundy (1990).

Angle of debris flow entry to channel: Open-slope debris flows entering channels from steep side-slopes can be expected to deposit and not continue on as debris torrents where the receiving channel has a relatively gentle gradient.

Table 2. Typical impact parameters for debris torrents, from (Robison and others, 1999).

Channel Impact Type		Impact Width (feet)	Impact Height (feet)	Channel Gradient (%)
	average	20	6	38
	minimum	0	0	0
Scour	5th percentile	6	0.5	9
n = 483	20th percentile	11	2	21
	80th percentile	26	10	55
	95th percentile	45	18	80
	maximum	110	40	110
	average	37	9	23
	minimum	3	0.2	0
Transport	5th percentile	7	1.5	3
n = 583	20th percentile	13	4	8
	80th percentile	50	13	35
	95th percentile	90	20	53
	maximum	300	62	110
	average	62	6	14
	minimum	0	0	0
Deposition	5th percentile	10	1	2
n = 718	20th percentile	22	2.5	3
	80th percentile	90	9	21
	95th percentile	170	16	42
	maximum	350	30	100

Channel gradient: Benda and Cundy (1990) and Robison and others (1999) both found that, in the absence of a sharp channel junction angle, debris torrents typically deposit along channel gradients less than 6 percent. The British Columbia Ministry of Forests (1994) found "Major velocity reductions and significant deposition of materials occur when channel gradients drop below 7 or 8 degrees (12 to 16 percent)", although this range may not be appropriate for debris torrents in Oregon. Channel gradients of less than 6 percent for 300 feet should result in deposition of most debris torrents. There are rare instances where serious impacts may extend

more than 300 feet along a channel gradient of less than 6 percent. This might be indicated by debris flow deposits further downstream than would normally be expected. Typically, the channel gradient of the gentlest section of channel is averaged over a distance of 300 feet, and reported in percent. Minimum gradients for channels with direct debris flow impacts from Robison et al. (1999) are shown in Table 2.

Channel confinement: Channel confinement has a significant effect on the transport and deposition of a debris torrent (VanDine, 1985). Confinement is the horizontal distance between valley or canyon walls. Channels flowing within relatively wide canyons are unlikely to carry a debris torrent. Very narrow, low gradient canyons may also stop debris torrents if the material is "wedged" between the canyon walls. Table 2 summarizes debris torrent impact height and widths presented by Robison et al. (1999).

Determination of confinement can be problematic, since it is dependent in part on the volume of the debris torrent. The authors of this technical note are unaware of any published data regarding numeric values for canyon or channel confinement and debris torrent transport and deposition. A rule of thumb for the "typical" Coast Range stream is to measure the width of the confining valley walls at a height of 10 feet above the channel bed (Figure 2). If the horizontal distance as measured from a point approximately 10 feet above the channel bed is greater than 200 feet, the channel is considered to be unconfined. The 200-foot criterion is likely conservative. Note that streams that are narrowly incised in an otherwise broad valley are unlikely to carry a significant volume of material, the 10-foot measurement rule-of-thumb would likely be very conservative in this case.

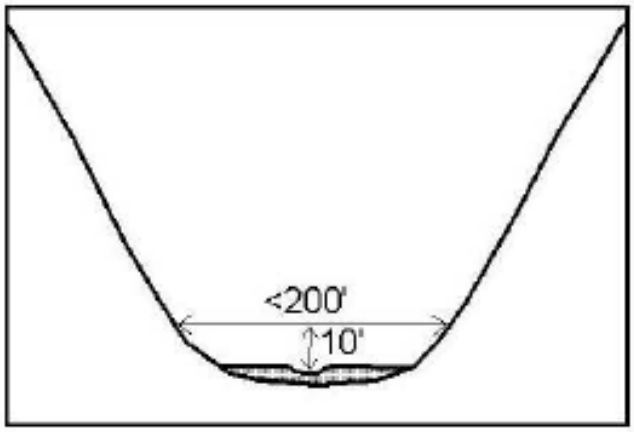

Figure 2. A "marginal" example of a confined channel.

Amount and type of material available to be entrained: There are four types of material typically present in channels that may influence transport and deposition: soil, boulders, down wood, and standing vegetation. Channels which have been recently scoured by a debris torrent or are otherwise lacking in material in the channel or banks will have less material available for debris torrent "bulking" and, therefore, less destructive potential. However, these channels

can still transport debris torrents. Debris torrents in channels through deep colluvium may scour an unusually large volume of material.

The role of down wood in debris torrent movement is not clear. One model suggests that debris torrents with higher wood content tend to deposit at steeper gradients than debris torrents with less wood (Lancaster et al. 2000). The role of standing trees in the debris torrent path is also unclear. Data from Robison et al. (1999) suggests that mature riparian vegetation along channels where debris flows are starting to lose momentum may cause debris torrents to terminate sooner than expected.

Potential energy available: The potential energy available for a shallow, rapidly moving landslide may be another important factor for evaluating impact potential. Important measures include the elevation drop from the high landslide hazard location to the structure or road and the angle of reach (Johnson, Swanston and McGee, 2000, Corominas, 1996, Benda and Cundy, 1990). The angle of reach is the average slope angle as measured along the slide path.

Obstructions or barriers: Natural or human-made obstructions may influence transport and deposition. For example, road fills, particularly in the deposition zone, may block transport. However, fills in steep transport reaches may fail, and increase the volume of debris and water comprising the rapidly moving landslide.

III. DEPOSITION

ODF field investigation of 18 debris torrents with varying degrees of impacts to roads and structures identified three factors associated with severe debris torrent impacts. These factors are:

1. A structure location that is within 110 feet of the channel at the loss of confinement and within 12 degrees of the channel alignment;
2. Channel gradients over 9 percent in the last 300 feet of channel above structures or roads; and
3. The initiating landslide is a large road fill failure.

Distance of the structure or paved road from the likely depositional area: Debris torrents tend to deposit most of their load over relatively short distances when the channel or canyon loses confinement. For open-slope failures the depositional distances tend to be even less.

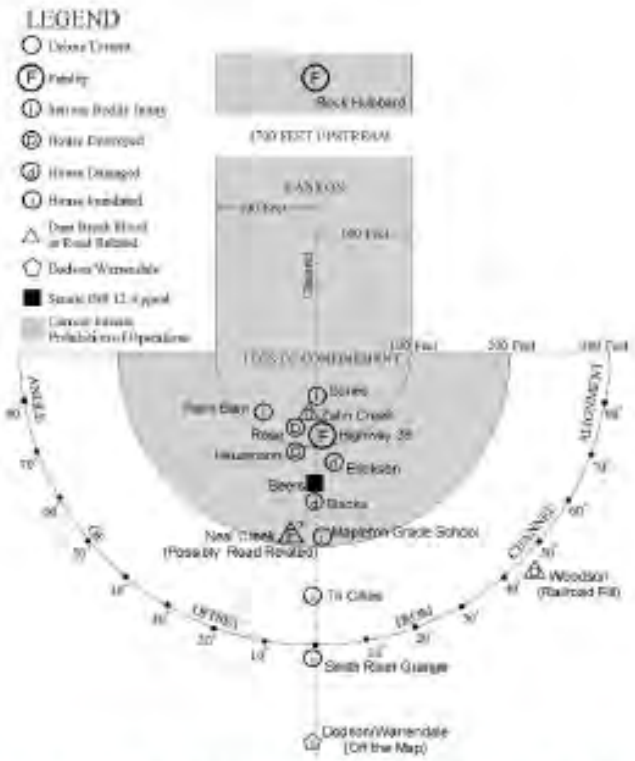

Figure 3. Plot of structures impacted by debris torrents in relation to the point where the delivering channel lost confinement. *Different types of events are represented with different symbols. Letters within those symbols are used to denote the level of impact and the occurrence of fatalities and serious bodily injuries.*

Channel alignment with structure or road: This is measured by the horizontal angle from the mouth of the confined canyon to the structure or road. ODF (2001) found that structures in direct alignment with channels received greater damage from debris torrents (Figure 3). Structures unaligned with channels did not experience significant damage from debris torrents.

Position of the structure or paved road: Structures or paved roads located at an elevation higher than the expected elevation of the debris flow transport/deposition area, or offset from the likely transport/deposition area are likely to be at a lower level of risk.

Evidence of past debris flow or torrent deposition: Evidence of past debris flow or debris torrent deposition may be used to indicate the past depositional history as well as the likelihood of future occurrence. ***Debris fans or deposits*** indicate past debris flow deposition at a site. Debris fans can be differentiated from alluvial fans in several ways. Debris fans are composed of unsorted deposits of coarse materials and fines and often have a noticeable amount of gravels, cobbles, and large boulders. Large wood debris may be present in younger fans. Alluvial fans are composed of sorted deposits of gravel and finer materials. Generally, debris fans have steeper snouts than alluvial fans. Debris flow processes can be thought of as different than alluvial processes in terms of the competence of the flow, i.e. debris flows can

transport rock fragments and "debris" of sizes which cannot be transported by normal fluvial processes. In many cases, after significant fluvial re-working of debris flow deposits, material which the stream cannot transport with typical fluvial mechanisms remain as lag deposits. Therefore, the presence of large rock fragments (boulders) may be one of the more reliable indications of previous debris flow deposition when finer material has been eroded away.

Mitigation

Structural mitigation can be used to lower the rapidly moving landslide impact rating, as described in OAR 629-623-0800 (1) and (2). Structural methods that mitigate deposition or impact may be constructed by the landowner under the direction of a geotechnical specialist. Deflection berms or walls, driven piles, structural elevation, and other forms of mitigation can be considered if they reduce the public safety risk. Mitigation must be completed before the start of the forest operation and must be proposed in a written plan submitted by the operator. The geotechnical specialist should inspect the mitigation site after construction to see if mitigation is properly constructed and if unforeseen conditions exist.

Geotechnical Reports

The geotechnical report should include a map of the proposed operation along with a determination of the rapidly moving landslide impact rating with a discussion and documentation of the geomorphic characteristics or other factors which the geotechnical specialist used to reach their conclusion.

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Oregon Department of Forestry Field Offices

For more information about the Oregon Forest Practices Act or the Forest Practice Rules, please contact your local Oregon Department of Forestry office which can be found at http://www.oregon.gov/ODF/Working/Pages/FindAForester.aspx *or the headquarters office at 2600 State Street, Salem, Oregon 97310. 503-945-7200.*

RE: Gales Peak logging

From: JACOBS Eric D * ODF (eric.d.jacobs@odf.oregon.gov)

To: george@schollsvalley.com

Cc: sgray@stimsonlumber.com; Mike.J.CAFFERATA@odf.oregon.gov; Eric.PERKINS@odf.oregon.gov

Date: Tuesday, February 15, 2022, 05:05 PM PST

Hello George,

Thank you for the email and explaining your concerns. I am indeed aware of the operation to which you referred that is occurring on Gales Peak. In fact, I have been in several conversations with the Stimson forester prior to the start of those operation as well as consulting with ODF's Geotech to address the presence of steep slopes in this area. The ODF Geotech provided an analysis of the public safety risk to myself and the Stimson forester. With that information, Stimpson was then able to develop a plan to address the steep slopes and high landslide hazard locations to meet the required rules for operating within these areas. Additionally, I appreciate your attention to the water right for Larry. In my review of the water resources, the presence of this feature was known and determined to be located in a drainage that was outside of the area of concern in relation to this operation. I would be happy to meet with Larry if he would like to review the location of his water right. If he has interest in meeting, please feel free to forward my information on to him.

Again, I appreciate you reaching out. For your awareness, I did want to include my supervisor (Eric Perkins) in this conversation and have CC'd him here.

If there is anything else that you would like to discuss, please feel free to contact me at any time.

Thank you,

Eric Jacobs

Stewardship Forester

Forest Grove District

Oregon Department of Forestry

Office: 503-359-7439

Cell: 971-701-3649

From: George Kral <george@schollsvalley.com>
Sent: Tuesday, February 15, 2022 10:00 AM
To: JACOBS Eric D * ODF <Eric.D.JACOBS@odf.oregon.gov>
Cc: GRAY Scott <sgray@stimsonlumber.com>; CAFFERATA Mike J * ODF <Mike.J.CAFFERATA@odf.oregon.gov>
Subject: Gales Peak logging

Hi Eric

I was unhappy to hear a felling crew working up on Gales Peak today as I had been informed that Stimson was finally done logging up there. It sounds like they are now taking the last swath of timber off the top. I want to be sure you are aware that they are working in a headwall that is as steep as it can be and still have trees on it. Soils in that headwall are very shallow over bedrock, and once it starts sliding, it will all be funneled down the canyon and straight into Larry Lund's house. From there, it's a straight shot across the field to our farm. Given the steepness of the canyon and the size of that face, there is no telling how far a slide could go. It's also worth noting that that creek is Larry's water supply. Larry was unaware that this was happening either.

I am certain that both ODF and Stimson are aware of the steepness of that face and its history of recent slides.

Please let me know what is going on.

Thank you,

-George

George Kral, Ph.D.
Forester & Botanist
Scholls Valley Native Nursery LLC

George Kral, Ph.D.
Forester & Botanist
Scholls Valley Native Nursery LLC

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4036 NW Half Mile Ln, Forest Grove, OR 97116

RE: Gales Peak timber removal

From: JACOBS Eric D * ODF (eric.d.jacobs@oregon.gov)

To: george@schollsvalley.com

Date: Monday, September 20, 2021, 02:27 PM PDT

Hello George,

It was good talking with you the other day, as well. As a 'Subscriber' to the FERNS system, you will only be able to see those notifications that are registered/submitted starting from the date that your subscription is activated. The only exception to this would be if a document (such as a statutory written plan) or a formal comment from a Stewardship Forester is entered on a notification that is located within your subscription area. Only under these conditions will a notification that was submitted prior to your subscription start date, show up in your list. I have attached a "How-To" document on registering as a subscriber for FERNS that explains this a little more, when/how you will need to re-subscribe, and other information on managing your subscription(s).

Notifications for operations (just like subscriptions) can only be submitted within the current calendar year. Based on the information you provided and our records, I did not find any information on a planned operation for the area that you identified. The last harvest operations that I see for that immediate vicinity appear to have been in 2018 and 2020, occurring on the south/southwest side of the ridge. While this does not mean that the landowner does not plan to propose future harvests in that area, at this time I am not privy to any such plans (for this calendar year or future years).

Under standard protocol, as it is not common practice for us to hand out personal information, I recommend that you reach out directly to Stimson, or a representative, to discuss specific questions to their planned activities. Of course, I am always happy to share what information that I can, as well as, assist with any questions or concerns that there may be associated with the Forest Practices Act (FPA). I am curious to learn more about future plans up there as well and will also be reaching out to Stimson.

I'll look forward to meeting you in person as well. Feel free to contact me any time if there is anything that I may be able to help with.

Thank you,

Eric Jacobs

Stewardship Forester

Forest Grove District

Oregon Department of Forestry

Office: 503-359-7439

Cell: 971-701-3649

From: George Kral <george@schollsvalley.com>
Sent: Sunday, September 19, 2021 3:46 PM
To: JACOBS Eric D * ODF <Eric.D.JACOBS@oregon.gov>
Subject: Gales Peak timber removal

Hi Eric

It was good to talk with you the other day. I have registered on the ferns site, but it will not tell me if there are any previously scheduled activities. Based on their timber sale layout flagging on the ground (see below), it looks to me like Stimson plans to take off the last

swatch of timber on the north face of Gales Peak. This is an incredibly steep headwall at the top of a stream whose natural flow enters our property, even though it has been diverted to the southeast. There have already been two slides off this slope from previous harvest activities which have affected our neighbors, and a big one could end up partially on us. Larry Lund's house is at the base of that canyon, and I don't want Larry's house and family interred on our property. Makes it hard to farm.

Could you please check your records, and with Stimson if your records are not clear, and find out if they plan to cut more timber up there? If so, could you let them know that at least one of their neighbors is concerned about slides and would like to hear what their plan is? feel feel to have them contact me directly. Stimson has liquidated their holdings here in Washington County, so I am sure they are trying to vacuum up the last scraps of nice second-growth, naturally regenerated forest within their holdings, but this is just not ok. It's 30 acres out of more than 50,000 that they have cleared off.

I'll look forward to meeting you in person at some point. I plan to be getting more involved in local forestry starting this year.

Thanks

-George

George Kral

Forester

How to Subscribe.pdf
908.3kB

DEBRIS FLOW RISK ASSESSMENT
Stimson Lumber Company
Black Diamond Harvest Unit
T 1N, R 4W, Sections 28 & 29

June 13, 2007

Prepared for:
Samuel Howard
Stimson Lumber Company
P.O. Box 68
Forest Grove OR 97116

P.O. Box 2238, Eugene, OR 97402 (541) 607-5700 FAX: 607-5701 CCB # 127073

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EXECUTIVE SUMMARY

The Black Diamond Harvest Unit is located in T 1N, R 4W, Sections 28 and 29, on the east-facing slope of a ridge extending southeast from Gales Peak. Both the observations at the site and the stereographic review of historical aerial photographs indicate that portions of the harvest unit and surrounding area have been subject to large-scale, deep-seated slope movements since a long time prior to the first harvest of timber in the area in the late 1940s and early 1950s.

Residence A is located on an apparent debris fan originating at the mouth of Basin 5. The residence is located approximately 360 from the point of loss of confinement, essentially directly downslope from the alignment of the draw above the fan, and rock fragments up to 2 feet in large diameter were found in the immediate vicinity of the house. This indicates that, in the past, prior to timber harvest in this area, debris flows have reached the area of Residence A with sufficient energy to cause damage to the house, and possibly, injure the residents. Therefore, GeoScience proposes that the Impact Rating for this residence is "Moderate", resulting in a Downslope Public Safety Risk Level of "Intermediate". However, the presence of a large pre-timber operations fan indicates that not harvesting the HLHL areas within the harvest unit will not significantly reduce the risk at least to Residence A.

There is little evidence to indicate that past debris flows have reached Residence B, but the natural deposits and system in this area was significantly modified during and following a slope movement of "overburden" down a small valley from the dump site of the quarry adjoining to the north and northwest. Therefore, statements regarding the possibility of impacts to House B are difficult. Nonetheless, this house appears to be located mostly off the higher-energy portion of the fan deposit.

Based on discussions at the site, and with Stimson Lumber Co. and ODF personnel, it has been determined that the most ideal way to proceed is to construct a debris flow diversion berm and associated overflow channel to significantly reduce the risk of debris flow impact to Residences A and B.

A conceptual berm design consists of berm constructed with 1.5H : 1V slopes on the south side and 2.5H : 1V slopes on the north side. A 15-foot elevation differential between crest of berm and overflow channel floor and a 30-foot wide diversion channel is recommended. It is also recommended to armor the channel side of the berm with large rip rap stones. The berm is designed to redirect the direction of moving debris flows by approximately 27 degrees over a distance of more than 200 feet. The diversion channel discharges to a low-lying area south of Residence A. The creek is kept along its current alignment by a low secondary dam transverse to the long axis of the berm, requiring an approximately 160-foot culvert through the berm.

INTRODUCTION

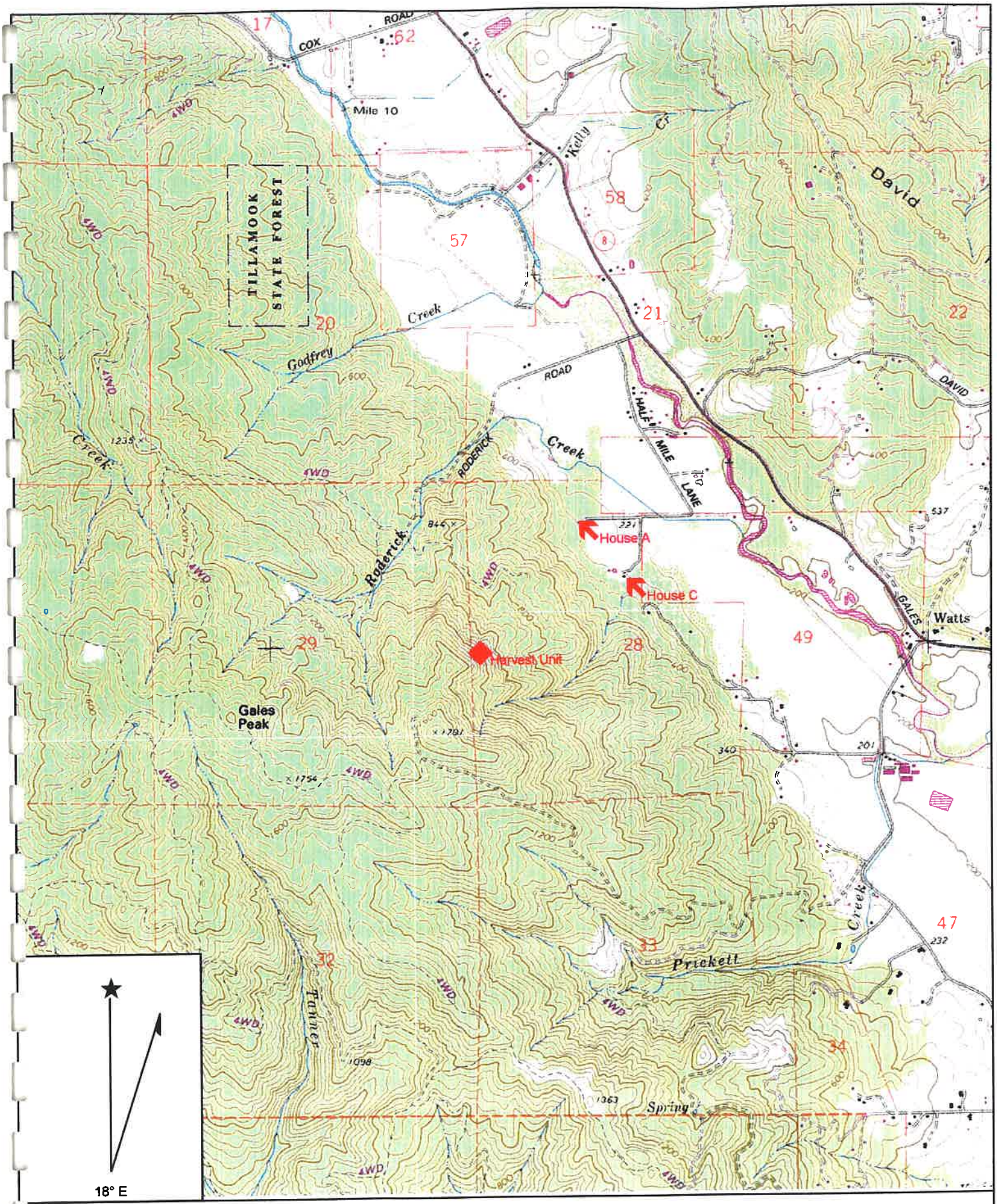
This report presents the results of a debris flow risk assessment conducted on a timber harvest unit located on the east-facing slopes of an unnamed ridge south of Gales Creek, in T 1N, R 4W, Sections 28 & 29 (Figure 1). The unit is located above three residences, none of which appear to be within the Further Review Area as described in the guidance. The assessment was conducted for Samuel Howard, the Assistant Unit Forester in Stimson Lumber Company's Gaston office, and follows guidance presented in ODF Technical Note 2, Version 2.0 (Appendix A).

AERIAL PHOTO REVIEW

Aerial photos were obtained both from the University of Oregon Aerial Photography Collection. Photo years available at the U of O included 1936, 1948, 1955, 1963, 1978, and 1989. The area was first harvested between the 1948 and 1955 air photos. Because the air photos had been pulled for the Issues Harvest Unit Report (GeoScience Inc. 12/16/06), the high-resolution scans did not cover this area for the air photo years when tree cover was minimal. However, relatively good exposure of the site is shown on the 1963 photos which have been used to perform geomorphic mapping and to show the locations of pertinent features. Scans of a stereo-pair of 1963 air photos are included on the CD in Appendix A. The locations of the residences of concern were copied from more recent air photos and maps available from Stimson. Figure 2 shows a delineation of drainage basins, creeks, and the debris fan near Residences A and B. For ease of reference in this report, the drainage basins were designated with a number and sub-basins were designated with letters. The harvest unit is shown in green and covers only the upper portions of the subject draws. The most important observation on the 1963 aerial photos includes a significant fan-shaped convex landform at the mouth of Draw 5. Residence A is located on this feature and Residence B is located off the fan to the NE. A much longer and narrower fan-shaped feature is present at the mouth of Draw 1 in the vicinity of Residence C, but this area was not visited during the field assessment because a decision had already been made by the ODF geotechnical specialists that the risk to this residence was low. As a result, no mapping of debris flow deposits (if any) was performed at that location. It is GeoScience policy to only map features on a geomorphic basis if the origin can be verified by geologic evidence in the field. Because the extent of the debris fan (if any) was not field-verified for Draw 1, no fan is shown at that location although it appears probable that a fan is present.

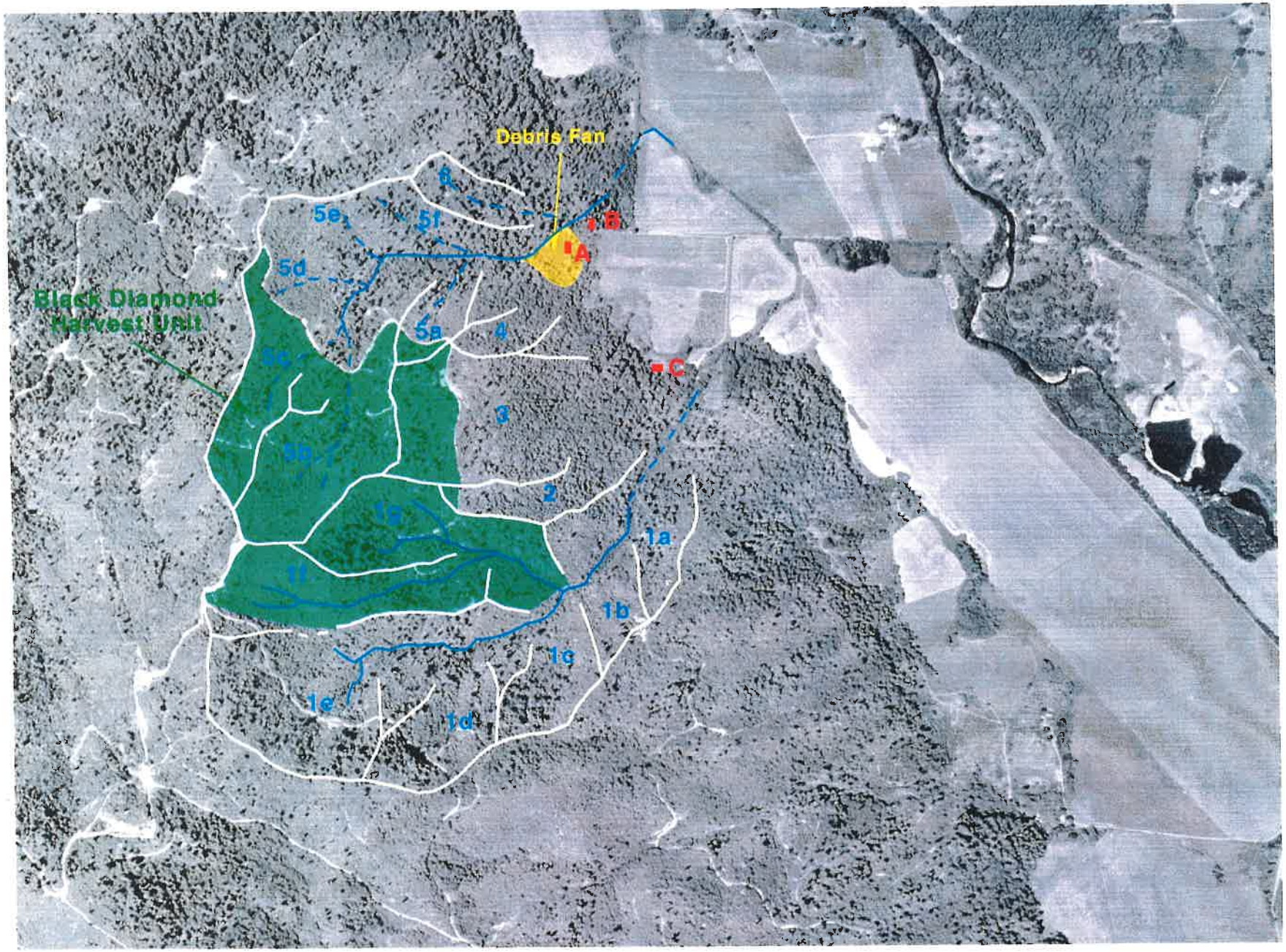
GEOLOGY

The *Geologic Map of Oregon* (Walker and McLeod, USGS, 1991) indicates that upper part of the ridge is underlain by *Ttv* (Upper and Middle Eocene Tillamook Volcanics), which are reported to consist of "Subaerial basaltic flows and breccia and submarine basaltic breccia, pillow lavas, lapilli and augite tuff with interbeds of basaltic sandstone, siltstone, and conglomerate. Includes some basaltic andesite, and, near the top of the sequence, some dacite". The lower part of the ridge is reported to be underlain by *Ti* (Oligocene Mafic Intrusions) which are described as: "Sheets, sills, and dikes of massive granophyric ferrogabbro; some bodies strongly differentiated and include pegmatitic gabbro, ferrogranophyre and granophyre".



Name: GALES CREEK
Date: 6/13/2007
Scale: 1 inch equals 2000 feet

Location: 045° 32' 36.8" N 123° 11' 37.0" W
Caption: Figure 1: Location Map



Stimson Lumber Co., Forest Grove, Black Diamond Unit DFRA

Figure 2: Geomorphic/Geologic Interpretation, Houses and HarvestUnit

Not to Scale. Base from 1963 Aerial Photograph

GeoScience, Inc.

FIELD OBSERVATIONS

The site was visited on December 8, 2006. Residence A is located within a few hundred feet of the apex of a low-sloping convex landform originating at the mouth of Basin 5 (see also site photos). Angular and rounded igneous rock fragments up to 2 feet in maximum diameter have been pulled from the garden area immediately side-slope (S) and up-slope from the house and placed as landscaping rocks in the southern yard of the residence (site photos). The main creek is located in a channel to the northwest of the house, following the northern boundary of the convex land form, running northeast-ward along the base of the adjacent slope. Upstream from and near the house, the creek channel contains igneous rock fragments to 18 or more inches in diameter. To the north of the residence, and in the vicinity of residence B, the creek channel has been significantly impacted by debris from a failure within Draw 6, which resulted from improper placement of fill ("overburden") at the quarry adjacent to the area to the north.

Residence B is located a couple of hundred feet east of the head of the northeast boundary of the convex landform originating at the mouth of Basin 5. The area has been extensively re-graded recently as the result of the debris which was deposited there following the failure at the quarry. Therefore, natural evidence regarding debris flow deposition has been mostly destroyed or significantly modified. Nonetheless, no natural larger rock fragments were found either in the creek channel in this vicinity or in isolated areas not affected by the recent slide. The residence is located within a few degrees of the channel alignment of the creek segment following the north boundary of the convex landform.

Within the harvest unit itself, evidence of previous large-scale slope movement, and debris flow deposition was noted in the vicinity of where the main access road to the unit crosses the main creek within Draw 5. Isolated rock fragments to 2.5 feet large diameter were noted in a deposit a few tens of feet upstream from the culvert and irregular relatively gently sloping ("hummocky") topography consistent with deep-seated movement is present on the east side of the creek valley.

An attempt was made to determine the nature of the deposits in the creek valley directly downstream from the road crossing. However, the brush in this area of relatively young re-prod is sufficiently thick to effectively hide most of the area.

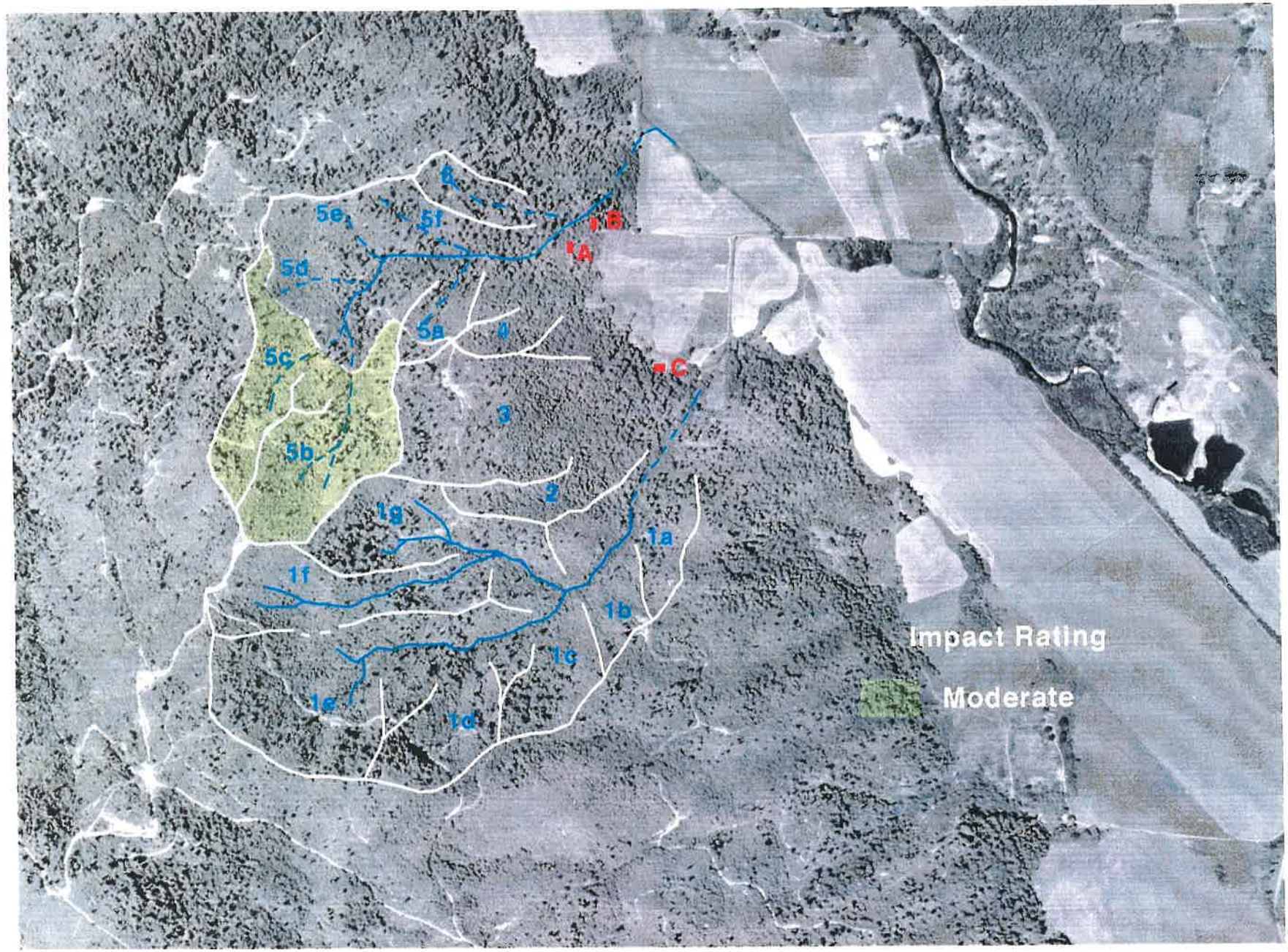
DISCUSSION

The harvest unit is located in an area which has been subject to large-scale deep-seated slope movements for a significant time, predating human activities and forest management in the area. The slope movements extend from near the top of the ridges to the main creeks. In some cases, the slope movements have resulted in the creation of "inner gorges" where the lower several tens of feet of the slopes adjacent to the creek channel are steeper than the rest of the slope. It appears that some of these over-steepened inner-gorge slopes are the main source of debris flows in these drainage basins. The lower edges of the deep-seated movements are continuously eroded by the creeks and lose lateral support, resulting in continuation of the deep-seated sliding movement.

This system does not appear to have been changed significantly with the advent of forest management. Although the entire area was subject to significant haul road, skid road and cat trail construction during the late 1940s and early 1950s harvest of the area, no evidence for debris flow activity could be found on the 1955 (post-harvest) air photos. A debris flow originated in the steep head wall of basin 1e between 1955 and 1963, probably as a result of either poor water management on the ridge-line road immediately above the initiation site, or as a result of side-casting, or both. The resulting debris flow appears to have reached the western edge of the fan but does not appear to have affected the area around residence C. In basin 5, no evidence of debris flow activity was noted following the forest operations in the early 1950s.

However, Residence A is located on a larger fan-shaped landform which appears to be constructed of material consistent with a debris flow origin, consisting of a silty sand with larger rock fragments. Residence B is located just off the outer northeastern limit of this landform. Measurements by ODF personnel indicate that Residence A is located 360 feet from the point of loss of confinement for creek 5. As a result, as described in ODF guidance, the residence is only located within the Further Review Area as a result of being constructed on the fan landform. Based on guidance and the relatively low slopes on the fan (average slope to house approximately 15 %), ODF personnel had relatively little concern regarding Residence A, and the concern was greater for Residence B, located closer to the creek channel. However, after more detailed assessment of the area around the house and observing the presence of rock fragments up to 2 feet in large diameter side-slope from Residence A, it appears that, in the past, debris flows from Basin 5 have reached the area of this house with significant energy. As a result, GeoScience recommends that the Impact Rating for this residence be upgraded to "MODERATE" (Figure 3). Because the residence is in Exposure Category "A", the resulting Downslope Public Safety Risk Level is "INTERMEDIATE"(Figure 4). This designation currently requires that half of the High Landslide Hazard Locations (HLHLs) in the area of the harvest unit located within Basin 5 be at a stand age of 9 years or older. Due to the configuration and topography within the unit, this designation realistically precludes harvest of large portions of the unit, because yarding has to occur over and through the HLHL areas. In addition, because debris flows have reached the current position of Residence "A" in the past, without influence from timber harvest, even without harvesting of the proposed Black Diamond Unit, debris flows could occur and reach the residence in the future.

As a result, it was proposed to significantly reduce the risk of impacts to Residence A (and B) from either harvest-induced or natural debris flows by constructing a debris flow diversion berm on the fan to direct potential debris flows to the area south of Residence A. The approximate proposed location of the berm is shown on Figure 5 and a topographic map of the berm design is attached in Appendix D. The berm is designed with a 1.5H : 1V slope facing the diversion channel and a 2.5H : 1V slope on the outside of the berm. Ideally, the side of the berm facing the channel would be lined with large rock fragments (large rip rap) at least in the upper two thirds of the berm, to preclude erosion of the berm by a moving debris flow. The berm is also designed with a relatively low smaller berm separating the overflow or diversion channel from the current creek channel immediately downstream of the culvert intake. This smaller berm is designed to keep the creek in its current channel and prevent channel shifts during normal high flows.

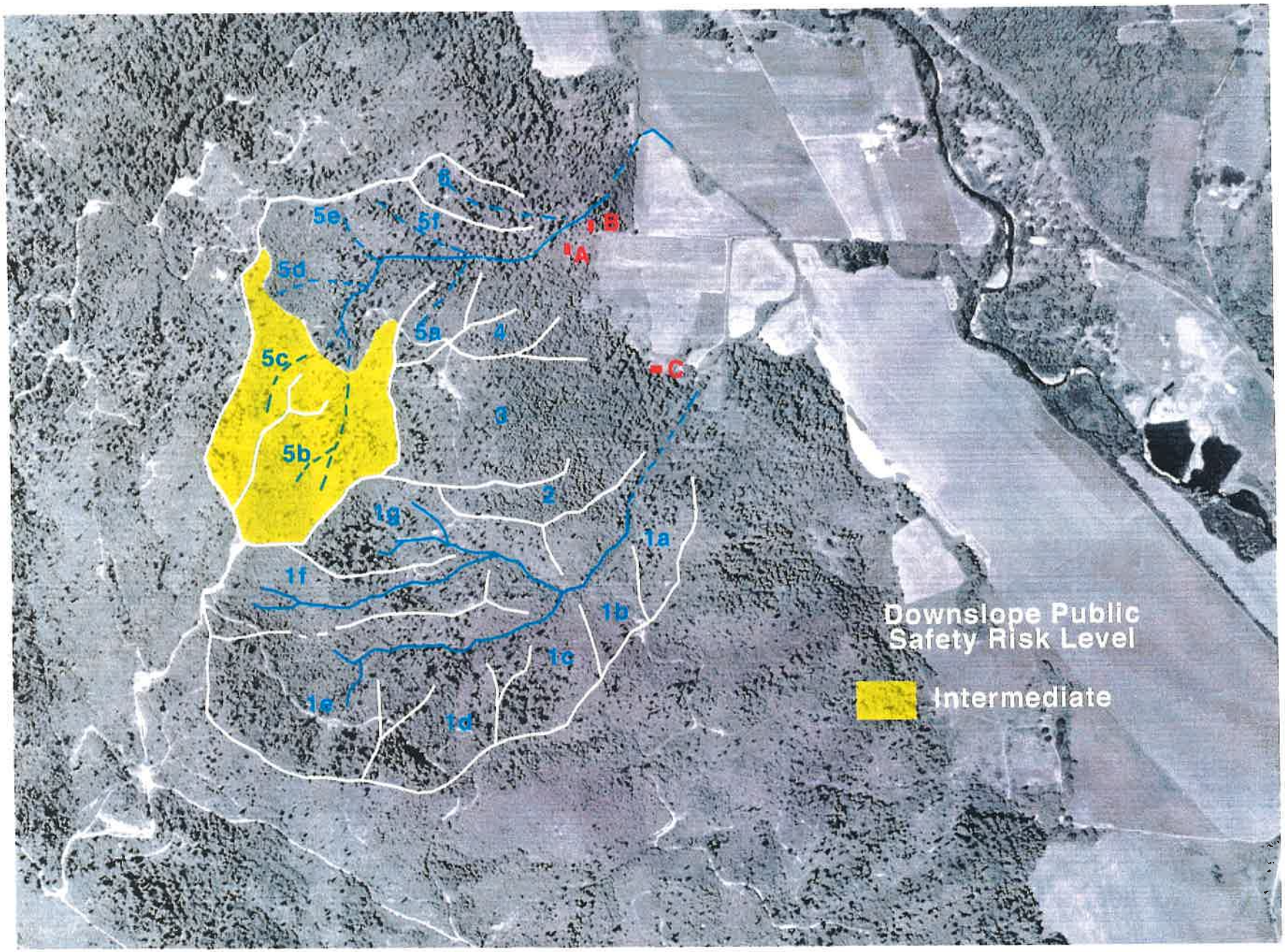


Stimson Lumber Co., Forest Grove, Black Diamond Unit DFRA

Figure 3: Impact Rating Relative to Residence A

Not to Scale. Base from 1963 Aerial Photograph

GeoScience, Inc.



Stimson Lumber Co., Forest Grove, Black Diamond Unit DFRA

Figure 4: Downslope Public Safety Risk Level Relative to Residence A

Not to Scale. Base from 1963 Aerial Photograph

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However, in the event of a debris flow, the flow is expected to remove this berm and proceed down the diversion channel. The diversion channel is oriented to direct potential debris flows to the south of the area occupied by Residence A and B. The overall change in flow direction is approximately 27 degrees in more than 200 feet. As designed, the crest of the berm is a minimum of 15 feet (up to 18 feet) above the floor of the diversion channel, and the floor of the diversion channel is 30 feet wide. The width at the top of the channel is approximately 55 feet at its narrowest point and the southern channel bank is approximately 12 feet lower than the berm crest, with low-sloping or SE-sloping terrain south of the channel bank. This is expected to result in overflow to the south out of the diversion channel prior to overtopping of the berm.

Once the diversion berm has been constructed, the risk of debris flow impact to Residence A is thought to be "UNLIKELY" and the Downslope Public Safety Risk Level is "LOW" (Figure 6).

CONCLUSIONS

The Black Diamond Harvest Unit is located in T 1N, R 4W, Sections 28 and 29, on the east-facing slope of a ridge extending southeast from Gales Peak. The area is underlain by Tillamook Volcanics which, in the lower portion of the slope, have been intruded by mafic igneous rocks. Both the observations at the site and the stereographic review of historical aerial photographs indicate that portions of the harvest unit and surrounding area have been subject to large-scale, deep-seated slope movements since a long time prior to the first harvest of timber in the area in the late 1940s and early 1950s. These slope movements are expressed as mid-slope benches, some with adverse (west-facing) slopes at the top, bounded on the upslope side by steeper slope segments ("scarps"), and disruption of drainage and deflection of creeks.

The area within and around the harvest unit was divided into a total of five drainage basins, each with several tributaries. Basin 1, the southernmost drainage, discharges towards a house (Residence C) located off the fan for this drainage basin (not visited in the field). Residence A is located on an apparent debris fan originating at the mouth of Basin 5. The residence is located approximately 360 from the point of loss of confinement, but rock fragments up to 2 feet in large diameter were found in the immediate vicinity of the house. This indicates that, in the past, prior to timber harvest in this area, debris flows have reached the area of Residence A with sufficient energy to cause damage to the house, and possibly, injure the residents. Therefore, GeoScience determined that the Impact Rating for this residence is "Moderate", resulting in a Downslope Public Safety Risk Level of "Intermediate". There is little evidence to indicate that past debris flows have reached Residence B, but the natural deposits and system in this area was significantly modified during and following a slope movement of "overburden" down a small valley from the dump site of the quarry adjoining to the north and northwest. Therefore, statements regarding the possibility of impacts to House B are difficult. Nonetheless, this house appears to be located mostly off the higher-energy portion of the fan deposit.

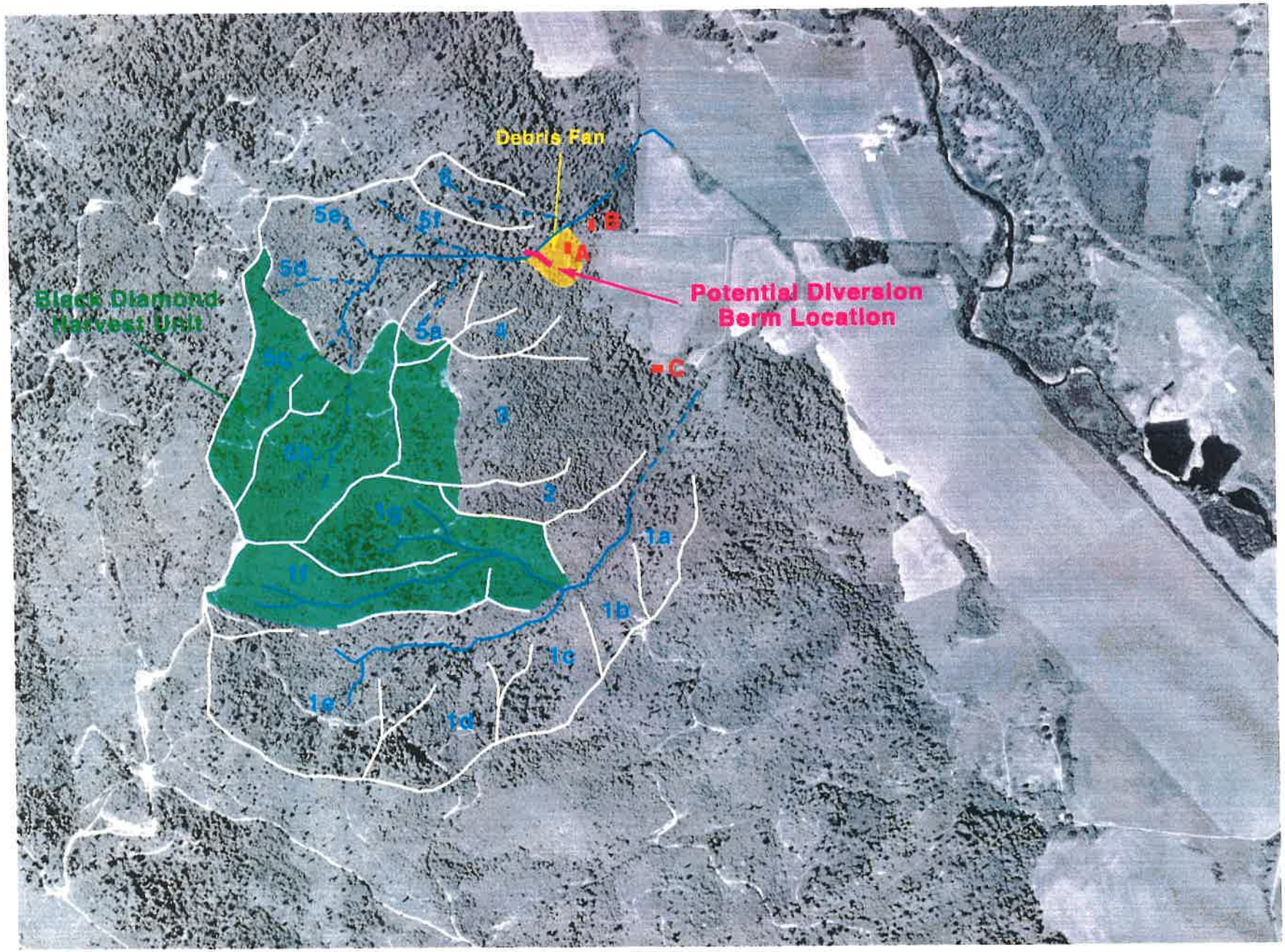

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Figure 5: Conceptual Debris Flow Diversion Berm Location (Houses A&B)

Not to Scale. Base from 1963 Aerial Photograph

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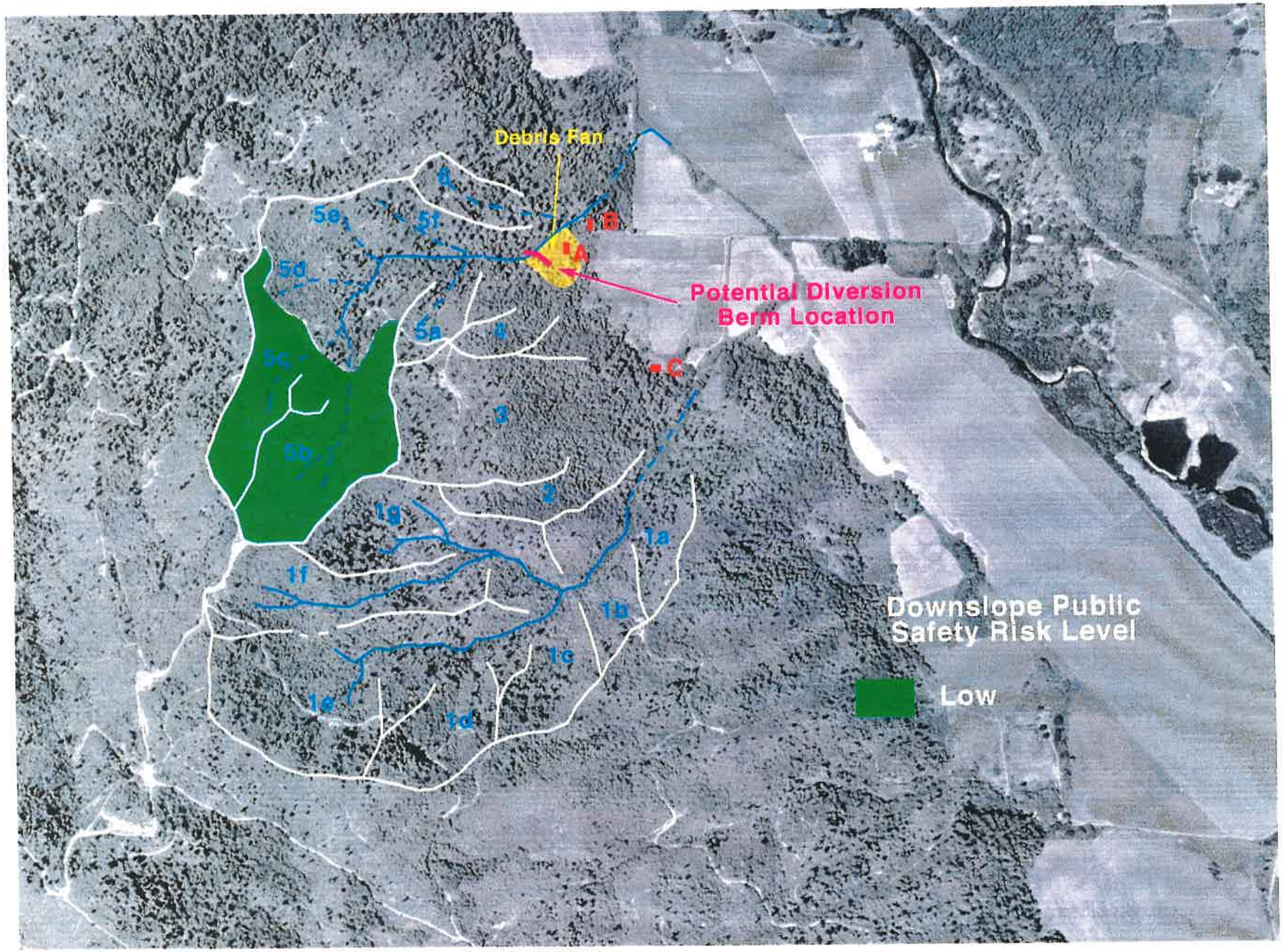

Stimson Lumber Co., Forest Grove, Black Diamond Unit DFRA

Figure 6: Downslope Public Safety Risk Level with Diversion Berm in Place

Not to Scale. Base from 1963 Aerial Photograph

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RECOMMENDATIONS

Based on discussions at the site, and with Stimson Lumber Co. personnel, it has been determined that the most ideal way to proceed is to construct a debris flow diversion berm and associated overflow channel to reduce the risk of debris flow impact to both Residences A and B. Whereas, the risk could also be reduced by leaving the portion of the Black Diamond Harvest Unit that is located on HLHL areas within Basin 5, the geologic evidence at the site indicates that debris flows have occurred prior to any timber harvest operations in this area. Therefore, not harvesting the HLHL areas will not significantly reduce the risk at least to Residence A.

Construction of a debris flow diversion berm on the upper portions of the debris fan will significantly reduce the risk of dangerous impacts to both Residence A and B. A conceptual berm design, including a 15-foot elevation differential between crest of berm and overflow channel and a 30-foot wide diversion channel is presented in Appendix D. The berm is designed to redirect the direction of moving debris flows by approximately 27 degrees over a distance of more than 200 feet. The diversion channel discharges to a low-lying area south of Residence A. The creek is kept along its current alignment by a low secondary dam transverse to the long axis of the berm, requiring an approximately 160-foot culvert through the berm.

LIMITATIONS

This report was prepared for Stimson Lumber Company and their authorized agents for use in the determination of risk for potential timber harvest sites. Our professional services were performed with the degree of skill and care typically exercised by similar firms in the area under similar budgetary constraints, and our recommendations were provided in accordance with generally accepted principles and practices. The analyses, conclusions, and recommendations in this report are based on site conditions observed during a reconnaissance level investigation and assume that the limited number of points investigated are generally representative of surface and subsurface conditions. No subsurface work was conducted during this investigation. GeoScience has reasonably relied upon client-furnished data, but we cannot be responsible for the accuracy of this information. If, in the future, conditions are found which differ significantly from those presented here, GeoScience must be advised at once so that these conditions and our recommendations can be reviewed and revised, if necessary. Should a substantial lapse of time occur between this investigation and future site activity, or if conditions have changed due to nearby construction or natural causes, the data contained in this report should be reviewed to determine its continued applicability. This report is not intended to provide a seismic risk evaluation of the subject property. GeoScience cannot be responsible for construction or forest management activity on other sites which neighbor or abut the subject property referenced in this report.

If you have any questions about this report, please do not hesitate to contact me at 607-5700.

Respectfully submitted,
GeoScience, Inc.

Gunnar Schlieder, Ph.D., CEG

APPENDIX A:

ODF Forest Practices Technical Note 2, Version 2.0

High Landslide Hazard Locations, Shallow, Rapidly Moving Landslides and Public Safety: Screening and Practices

Forest Practices Technical Note Number 2
Version 2.0

Effective January 1, 2003

Objective: Technical notes are written to help resource professionals, in this case, foresters or engineers responsible for planning harvest operations or road construction on steep slopes. This technical note is designed to help forest practices foresters, landowners, and operators screen forestlands prior to harvesting or road construction to identify locations subject to the Shallow, Rapidly Moving Landslides and Public Safety Rules (OAR 629-623-0000 through 0800). For operations identified by this screening process, Forest Practices Technical Note 6: *Determination of Rapidly Moving Landslide Impact Rating* may be used to determine public safety restrictions.

Background: Senate Bill 12 (1999) directed the Board of Forestry to adopt rules to replace a temporary prohibition of certain operations authorized by Senate Bill 1211 in 1997. The Shallow, Rapidly Moving Landslides and Public Safety rules are effective January 1, 2003. **This guidance supercedes *Version 1.0* of this note (from October 18, 2000).** This guidance is intended to apply to shallow, rapidly moving landslides, and should be applied with caution when evaluating the public safety risk associated with road fill failures, waste area failures, or deep seated landslides.

Initial screening of operations: The initial screen determines if there may be high landslide hazard locations within the operation area **and** if there may be structures or roads in the path of a potential shallow, rapidly moving landslide below the operation area (Figure 1).

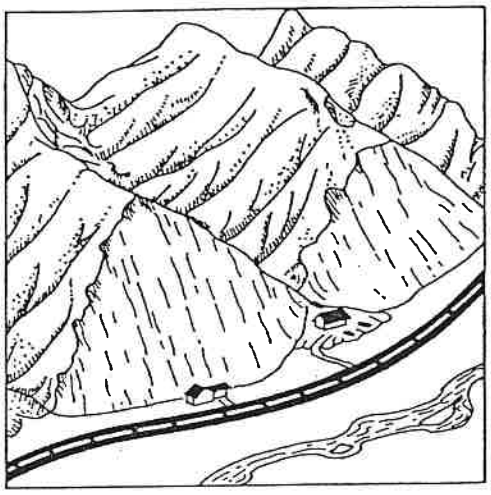

Figure 1. Homes and road in debris flow-prone locations (on a debris fan at the base of a debris torrent prone channel and at the base of a uniform steep slope).

The Oregon Department of Forestry will conduct the initial screen to determine if the shallow, rapidly moving landslides and public safety rules might apply to an operation. The results of the initial screen determine if further investigation is needed. Further investigation is needed (see pages 4-8 of this document) if both of the two following conditions exist:
1) There may be ***high landslide hazard locations*** within the proposed operation area, based on map-estimated slope steepness or other information;
2) There may be structures or public roads downslope from the proposed operation area that could be impacted from a shallow, rapidly moving landslide initiating within the operation area.

Figure 1 illustrates the typical conditions that should be identified by this screening process.

Slope steepness: The initial screen for slope steepness should use USGS 1:24,000 topographic maps, a ten-meter digital elevation model (DEM) based on these maps, or more accurate slope steepness information. Because USGS maps tend to underestimate actual slope steepness, map- or ten-meter DEM-determined slopes steeper than 65 percent for most of western Oregon, and 60 percent in the ***Tyee Core Area*** (described later in this Technical Note) are considered likely to have high landslide hazard locations in the field. Thirty-meter DEMs should not be used for screening, since they are very inaccurate.

Structures and public roads: Shallow, rapidly moving landslides move down steep hillslopes and confined stream channels. They can move long distances, over a mile in some cases, especially if they enter a confined stream channel. If there may be structures or public roads in canyons, near the mouths of canyons, or close to the base of steep slopes below the operation, then additional on-the-ground investigation is needed.

Terminology:

A ***debris fan*** is a deposit formed when a debris flow comes to rest. Fans are typically composed of poorly sorted boulders in soil and may also include woody material.

A ***debris flow*** is a highly mobile slurry of rock, soil, wood, and water that can travel hundreds to thousands of feet on steep slopes or in steep channels. There are two types of debris flows: open-slope debris flows and debris torrents. Debris flows are shallow, rapidly moving landslides.

A ***debris torrent*** is a debris flow confined within a channel or draw. They often scour the channel to bedrock, increasing in size as they travel hundreds or thousands of feet beyond the site of initial failure, delivering significant volumes of material to their deposition area.

Exposure categories [629-600-0100(21)] are used to designate the likelihood of persons being present in structures or on public roads during periods when shallow, rapidly moving landslides may occur.

A ***further review area [629-600-0100(29)]*** is an area that may be subject to rapidly moving landslides. It includes high landslide hazard locations, as well as certain slopes and channels below high landslide hazard locations. Occupied buildings or paved public roads in further review areas may be at risk from shallow, rapidly moving landslides.

Headwalls are obviously concave-shaped slopes (as seen along the slope contour on the ground surface) that can concentrate water to increase landslide susceptibility. Landslides occurring in these locations are also more likely to move as channelized debris flows than landslides that initiate in other areas of the slope.

A ***high landslide hazard location [629-600-0100(31)]*** is a specific site that is subject to initiation of a shallow, rapidly moving landslide. Criteria for identification of high landslide hazard locations are described later in this note.

An ***open-slope debris flow*** is a debris flow that does not enter a confined channel or unchannelized draw. They travel tens to hundreds of feet from the initiating high landslide hazard location.

A ***shallow, rapidly moving landslide [629-600-0100(61)]*** means any detached mass of soil, rock, or debris that begins as a relatively small landslide on steep slopes and grows to a sufficient size to cause damage as it moves down a slope or stream channel at a velocity difficult for people to outrun or escape.

The ***Tyee Core Area [629-600-0100(74)]*** is defined as "a location with geologic conditions including thick sandstone beds with few fractures. These sandstones weather rapidly and concentrate water in shallow soils creating a higher shallow, rapidly moving landslide hazard. The Tyee Core area is located within coastal watersheds from the Siuslaw watershed south to and including the Coquille watershed, and that portion of the Umpqua watershed north of Highway 42 and west of Interstate 5. Within these boundaries (as shown in Figure 2), locations where the bedrock is highly fractured or not of sedimentary origin, as determined in the field by a geotechnical specialist, are not subject to the Tyee Core area slope steepness thresholds." See Figure 2.

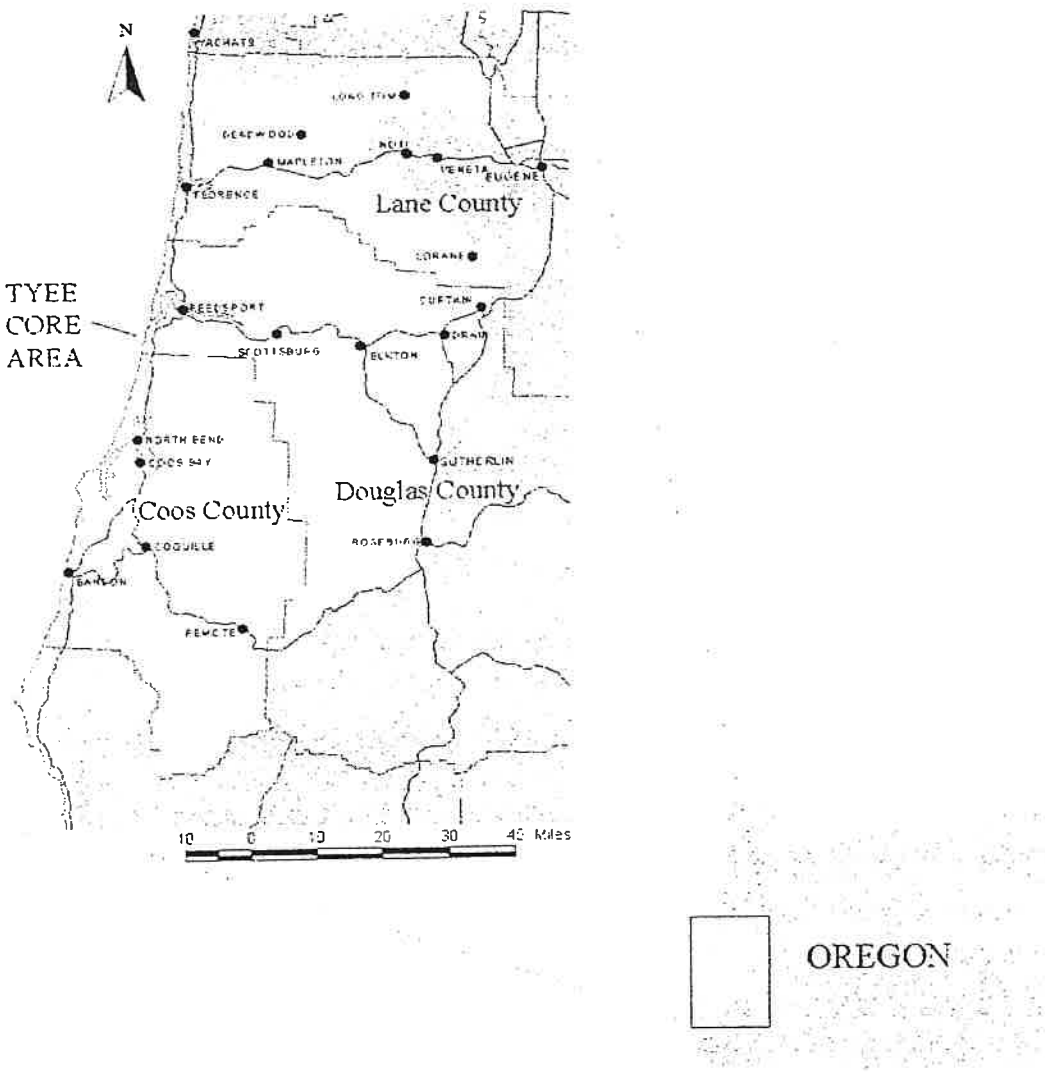

Figure 2. Location of the Tyee Core Area.

Overview of steps for determining necessary forest practices: For operations that meet the initial screen described earlier, further investigation using the five following steps is needed to determine if the operation is subject to the shallow, rapidly moving landslides and public safety rules, and to determine the required forest practices. Note that all operations containing high landslide hazard locations are subject to the rules for natural resource protection, regardless of whether the public safety rules also apply.

Step 1 - Determine the ***further review area*** for the operation. The further review area begins at high landslide hazard locations within the operation **and** continues down the channel or slope below the operation until that channel or slope cannot transport a shallow, rapidly moving landslide.

Part A - Identifying ***High Landslide Hazard Locations***

Part B - Identifying downslope extent of the ***Further Review Area***

Step 2 - Verify if there are structures or public roads below the operation area and in the further review area. If so, determine the ***Exposure Category*** for these structures or roads. If not, then the landslide and public safety rules do not apply. Apply natural resource forest practices rules.

Step 3 - Determine Rapidly Moving Landslide Impact Rating as ***extreme***, ***serious***, ***moderate***, or ***unlikely***.

Step 4 - Downslope Public Safety Risk is determined as ***Substantial, Intermediate, or Low***.

Step 5 - Harvesting and road building practices are regulated based on the Downslope Public Safety Risk Level determination.

STEP 1: DETERMINE THE FURTHER REVIEW AREA FOR THE OPERATION.

Part A - Identifying High Landslide Hazard Locations

Are there any high landslide hazard locations present within the proposed harvest unit or along the proposed road [629-623-0100(1)]?

A ***high landslide hazard location*** is a slope with characteristics (steepness, shape, and geology) that make it subject to shallow, rapidly moving landslides. Other landslides that are large and typically move more slowly, such as slumps and earthflows, are not *shallow, rapidly moving landslides*. A *shallow, rapidly moving landslide* begins as a relatively small landslide and moves at a velocity that is difficult for persons to outrun or escape. Note that high landslide hazard location identification is based on physical slope characteristics and is independent of proposed harvesting or road building practices.

High landslide hazard locations are specific sites that are subject to initiation of shallow, rapidly moving landslides. The specific criteria for determination of these sites is found in 629-623-0100 (3) as:

(a) The presence, as measured on site, of any slope in western Oregon (excluding competent rock outcrops) steeper than 80 percent, except in the Tyee Core Area, where it is any slope steeper than 75 percent; or

(b) The presence, as measured on site, of any headwall or draw in western Oregon steeper than 70 percent, except in the Tyee Core Area, where it is any headwall or draw steeper than 65 percent.

(c) Notwithstanding the slopes specified in (a) or (b) above, field identification of atypical conditions by a geotechnical specialist may be used to develop site specific slope steepness thresholds for any part of the state where the hazard is equivalent to (a) or (b) above.

Field Measurements: High landslide hazard locations are determined based on measurements of the steepest slopes on-the-ground. These field measurements may find slope conditions different from the initial screen, and take precedence over the screen. Short pitches of steep slopes that are less than 30 feet slope length in otherwise relatively gentle terrain are not

considered high landslide hazard locations. Constructed cutslopes are not considered high landslide hazard locations, but sidecast and other fillslopes are. Remember that clinometers do not give precise slope readings, so when slopes just under threshold criteria are measured with a clinometer, they may in fact be high landslide hazard locations.

Part B - Identifying downslope extent of the Further Review Area

Does the channel or slope have characteristics which are conducive to open-slope debris flow or debris torrent transport or deposition (part of the further review area)?

Open-slope debris flows typically slow down or stop when they encounter unconfined and relatively gentle slopes (wide valleys or benches). Debris torrents usually stop when they enter unconfined channels, low gradient stretches of channels, or debris fans.

For debris torrents, the further review area is 100 feet on each side of a confined channel. The further review area ends after any of the following conditions are encountered:
1. The average channel gradient becomes 6% or less for at least 300 feet.
2. The canyon width exceeds 200 feet or more for a distance of at least 300 feet. The width is generally measured at a height of 10 feet above the channel bottom.
3. The channel loses confinement (such as at the mouth of a canyon). The further review area extends 200 feet from the point where the channel loses confinement.

However, regardless of conditions described above, if there is field evidence of a *debris fan* at the mouth of the channel, the further review area continues to the lower edge of the debris fan.

For *open-slope debris flows*, the further review area ends 100 feet downslope after slope gradient drops to and remains below 40 percent.

STEP 2: ARE THERE STRUCTURES OR PUBLIC ROADS IN THE FURTHER REVIEW AREA? IF SO, DETERMINE THE EXPOSURE CATEGORY.

On the ground, carefully look for structures or roads. Obtain permission from other landowners as needed. If these structures or public roads are within the further review area, determine the Exposure Category for the operation.

Exposure Categories are used to designate the likelihood of persons being present in structures or on public roads during periods when shallow, rapidly moving landslides may occur. When there are high landslide hazard locations within a proposed timber harvesting area or along a proposed road, operators must identify structures and paved public roads that might be at risk from rapidly moving landslides initiating within the operation area [629-623-0100(2)]. There are three exposure categories that can trigger the shallow, rapidly moving landslides and public safety rules, as described in OAR 629-623-0200(2)-(4).

Exposure Category A includes habitable residences, schools, and other buildings where people are normally present during periods when wet season rainstorms are common.

Exposure Category B includes paved public roads averaging over 500 vehicles per day, as determined, if possible, during periods when wet season rainstorms are common.

Exposure Category C includes barns, outbuildings, recreational dwellings not included in Exposure Category A, low-use public roads, and other constructed facilities where people are not usually present when wet season rainstorms are common.

Periods when wet season rainstorms are common generally means November 1st through April 30th. If the building is occupied during the winter, it is Exposure Category A. If a building is occupied mostly in the summer, it is Exposure Category C. Outbuildings, such as barns or detached garages, are not normally considered to be occupied buildings and are typically in Exposure Category C.

Evaluating traffic volume: The Oregon Department of Transportation has traffic volume data for state highways. In addition, many counties also have traffic use data available. Landowners may be able to conduct their own traffic counts, using standard traffic count methods. In the absence of traffic count data, double-lane, paved county and state roads are considered to be high traffic volume roads.

Special circumstances: Certain structures in the path of rapidly moving landslide that might fail upon impact and injure persons in structures or on roads further downstream are also considered by the rules. OAR 629-623-0250 (4) states that "the impact rating may include the potential for the failure of a structure in the direct path of a rapidly moving landslide resulting in a substantial risk of serious bodily injury or death to the exposed population below that structure". Such structures can include certain dams, power transmission towers, and industrial fuel tanks. An impact rating should also be conducted for these structures, as described in Technical Note 6.

STEP 3: DETERMINE THE IMPACT RATING.

Impact Ratings: OAR 629-623-0250(3) allows the State Forester to require the landowner to submit a geotechnical determination of shallow, rapidly moving landslide impact rating. A geotechnical determination of impact rating may be required for any structures or roads meeting Exposure Categories A, B, and in some special cases C, within the further review area below the operation. Landowners should consult with ODF before enlisting the services of a geotechnical specialist.

A geotechnical specialist, normally a licensed geotechnical engineer or engineering geologist, may conduct the geotechnical determination of rapidly moving landslide impact rating. Forest Practices Technical Note Number 6, *Determination of Rapidly Moving Landslide Impact Rating,* has been designed for these geotechnical determinations. After the operator has submitted the geotechnical report, the State Forester will review the final impact rating based on information provided in the geotechnical report. The State Forester has the final determination of the impact rating [629-623-0200(5)].

The impact rating identifies the relative risk of rapidly moving landslide impact to structures or roads where there may be a risk of serious bodily injury or death. The impact rating reflects the frequency and expected severity of impact from a rapidly moving landslide initiating within a

forest operation impacting any specific structure or road. Property damage alone is not considered in determination of impact rating.

Rapidly moving landslide impact potential is rated as ***unlikely, moderate, serious*** and, in limited cases, ***extreme*** (OAR 629-623-0250(2)).

Rapidly moving landslide impact rating definitions:

- **"Unlikely"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is unlikely to reach the structure or road.
- **"Moderate"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is likely to stop prior to the structure or road, or will not directly impact the structure or road. However, a moderate rating also indicates that dangerous impacts cannot be reasonably ruled out.
- **"Serious"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is likely to directly impact a structure or road.
- **"Extreme"** impact rating indicates that any shallow, rapidly moving landslide initiating within the operation area is likely to directly impact a structure or road and, in addition, there are unusual conditions that make dangerous impacts almost certain.

STEP 4: DETERMINE DOWNSLOPE PUBLIC SAFETY RISK LEVEL.

Downslope public safety risk levels are based on the exposure category (from Step 2) and the rapidly moving landslide impact rating (from Step 3). Downslope public safety risk level is characterized as either "substantial," "intermediate," or "low."

Table 1 is a matrix that shows how Exposure Category [OAR 629-600-0100(21), 0200(2)-(4)] and Rapidly Moving Landslide Impact Rating [OAR 629-623-0250(1), (2)] are used to determine Public Safety Risk Level [OAR 629-623-0300(1)].

Table 1. Downslope Public Safety Risk Levels

Exposure Category	Rapidly Moving Landslide Impact Rating			
	EXTREME	*SERIOUS*	*MODERATE*	*UNLIKELY*
A	Substantial	Substantial	Intermediate	Low
B	Substantial *	Intermediate	Low	Low
C	Intermediate *	Low	Low	Low

* When determined by the State Forester

STEP 5: DETERMINE THE ALLOWABLE HARVESTING AND ROAD BUILDING PRACTICES.

Substantial downslope public safety risk [629-623-0400 and 629-623-0450]: Prohibits all timber harvest and new roads on high landslide hazard locations (with some exceptions). Removal of dead or diseased trees, or trees on sites that have already failed and trees that have blown over can be allowed. The operator must demonstrate this operation results in no increased downslope public safety risk. Slopes must be protected from increased soil disturbance during harvesting and will be rapidly reforested.

Intermediate downslope public safety risk [629-623-0500 and 629-623-0550]: Requires that no more than half the high landslide hazard locations on a single ownership within the basin (for debris torrents) or hillslope (for open-slope debris flows) are in the 0 to 9 year age class or with otherwise reduced canopy closure in other age classes. This can allow for limited clearcutting. Thinning or partial cutting is allowed on all of the high landslide hazard locations to the extent that a healthy canopy is maintained during and after harvest. Given the variability of stand and site conditions across the state, setting a specific target (stems per acre, canopy closure, basal area, etc.) is difficult. The trees left after harvest should have healthy crowns and be capable of responding with rapid canopy and root regrowth after thinning. One acceptable strategy is to thin from below, retaining most of the dominant and co-dominant trees. The final density after thinning should be no lower than 30% of the maximum stand density index, with an increase in average tree diameter. This strategy, or any other thinning regime than recovers crown closure in ten years or less is acceptable.

Note that high-grading, selecting the largest trees for removal, will not result in rapid canopy closure, and is not an acceptable intermediate public safety risk practice. The long-term target is full evergreen canopy cover as a surrogate for winter water storage and fine root mass. Proposed silvicultural prescriptions in the required written plan will be evaluated in terms of their abilities to achieve that target. Thinning or partial cutting of predominately hardwood stands, unless it is done to encourage conifer growth or regrowth, is generally not considered an acceptable silvicultural practice for maintaining or enhancing canopy cover. Road construction operations require the operator to address in the written plan an evaluation of cutslope stability and other measures to prevent water from draining onto high landslide hazard locations. Generally, this will require operator-provided geotechnical specialist involvement.

Low downslope public safety risk [629-630-0500]: Harvesting and road building operations are not subject to restrictions for landslides and public safety. Natural resource protection rules apply to these operations, and also to any harvesting that might be allowed if there is Intermediate or Substantial Downslope Public Safety Risk. When harvesting on **any** high landslide hazard locations, operators must not construct skid roads or use ground-based equipment on these sites, and must ensure that log falling and yarding operations do not result in extensive disturbance or gouging.

Windthrow Considerations: Operators should be aware that windthrow may be a factor contributing to shallow, rapidly moving landslides. The operator should consider the wind firmness of trees that are to be left on high landslide hazard locations and will likely need to leave additional trees outside the boundaries of the unharvested area to reduce windthrow hazard to retained trees. Crown and bole characteristics, exposure to prevailing storm winds, topographic effects, relative height of trees, and species mix (conifer/hardwood) should be evaluated when determining harvest unit boundaries when high landslide hazard locations are present. Removal of trees that can impact structures or roads can be allowed if the risk to these homes or roads from windthrow is greater than the risk from shallow, rapidly moving landslides.

Administration of the Shallow, Rapidly Moving Landslides and Public Safety Rules: The Department of Forestry will evaluate Notifications of Operations for applicability of the Shallow, Rapidly Moving Landslides and Public Safety Rules. Operators will be informed if there may be high landslide hazard locations within the operation area. It is the operators' responsibility to then use this technical note to confirm the high landslide hazard locations, and to identify the

presence of structures and paved public roads within the further review area. It is also the operators' responsibility to obtain geotechnical services for determination of the Impact Rating for the operation. After the operator has submitted the geotechnical report, the State Forester will review the final impact rating based on information provided in the geotechnical report. The State Forester has the final determination of the impact rating. Oregon Department of Forestry geotechnical specialists are available to assist forest practices foresters as needed.

Written Plan Requirements: For operations with substantial or intermediate public safety risk, the operator must submit a written plan (OAR 629-623-0700) that includes:

- A determination of public safety risk based on the impact rating for the operation;
- A map showing those portion(s) of the operation containing high landslide hazard locations;
- The location of all existing and proposed new roads crossing high landslide hazard locations;
- A detailed road design for all new or reconstructed roads crossing high landslide hazard locations;
- The location of habitable structures (Exposure Category A) and paved public roads (Exposure Category B) below the operation and within further review areas;
- Locations where timber harvesting will not occur;
- Locations where partial cutting will occur and the specific silvicultural prescription; and
- Additional information related to the operation, as requested by the State Forester.

Limitations: These criteria, and the forest practice rules that apply to other forest operations, are intended to minimize disturbances to high landslide hazard locations, but do not eliminate downslope risks. Shallow, rapidly moving landslides occur in both forested and non-forested areas alike. The shallow, rapidly moving landslide rules do not eliminate the landslide threat to downslope occupied buildings or high traffic volume roads. Less steep slopes may still be subject to a lower landslide hazard, and there are also other types of landslides that may pose a threat to public safety.

Sources of More Detailed Technical Information:

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Mills, K. & Hinkle, J. 2001. Landslides and Public Safety: an Issue Paper prepared for the Oregon Board of Forestry. Oregon Department of Forestry.

Oregon Department of Forestry 2003. Forest Practices Technical Note Number 6; Determination of Rapidly Moving Landslide Impact Rating.

Robison, E. G., K. Mills, J. T. Paul, L. Dent, and A. Skaugset. 1999. Oregon Department of Forestry 1996 Storm Impacts Monitoring Project: Final Report. Forest Practices Technical Report #4. Oregon Department of Forestry, Salem, Oregon. 141 pp.

APPENDIX B:

Clean Portions of 1963 Air Photo Stereo Pair

APPENDIX C:

Selected Site Photos

View WNW to residences A (L) and B (R) and harvest unit above. Note house A on fan-shaped land form, house B beyond right edge of this feature. Also note quarry above house on R.

Closer view of fan-shaped landform with houses A and B.

Cut bank behind house A. View SW. The next picture is taken on slope below shed.

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Igneous rock fragments in cut bank directly upslope of House A. Sandvik for scale.

Rock fragments dug from garden area in fore- and middle ground. House A in back. View N.

Closer view of appr. 2-ft. rock fragment at stump in picture above on R.

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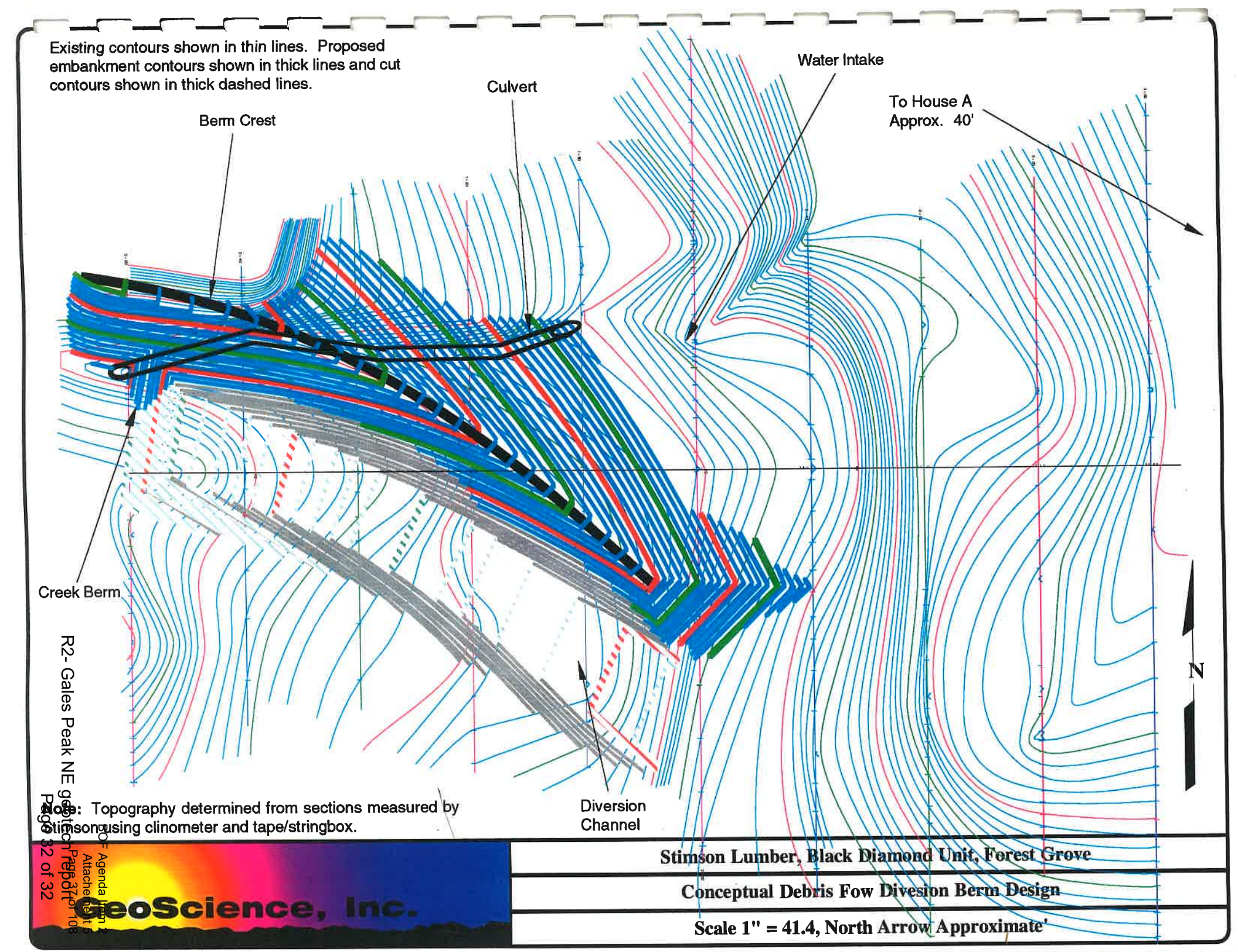
Stimson Lumber Co., Forest Grove, Black Diamond DFRA

Appendix D

Conceptual Debris Flow Diversion Berm Design



Note: Topography determined from sections measured by Stimson using clinometer and tape/stringbox.

Stimson Lumber, Black Diamond Unit, Forest Grove

Conceptual Debris Fow Divesion Berm Design

Scale 1" = 41.4, North Arrow Approximate'

GeoScience, Inc.

R2- Gales Peak NE geotech report

KRAWCZYK Joy P * ODF

From: JACOBS Eric D * ODF
Sent: Thursday, February 24, 2022 12:31 PM
To: BUREN Michael R * ODF
Cc: PERKINS Eric * ODF
Subject: Nordgren Riparian Area w/ HLHL
Attachments: Cut area within Type D RMA w HLHL.pdf; reference map for cut area.pdf

Hey Mike,

The Stimson Forester posed a question about the removal of trees that were already cut within the Type D stream (and which include areas of HLHL).
Do you know of any concerns from a potential slide or other HLHL standpoint that would suggest/require those trees be left where felled in any of those areas? (specifically talking areas +/- 20' from the stream channel)
See the attached maps for reference to where those cut areas are (approximately)?

If this is a call better determined on site or you have any questions let me know.
Thanks,

Eric Jacobs
Stewardship Forester
Forest Grove District
Oregon Department of Forestry
Office: 503-359-7439
Cell: 971-701-3649

KRAWCZYK Joy P * ODF

From: BUREN Michael R * ODF
Sent: Friday, March 04, 2022 8:07 AM
To: JACOBS Eric D * ODF
Subject: Nordgren 2022-531-01917

Eric,

Yesterday I met yourself and Eric Peters from the District, Dave Sweeney from Stimson, and neighbors Messrs. Lund, Bonebreak, Kral (and Dan his "employee") at the Lund residence. I had formerly made an evaluation of public safety and landslides in the context of the landslides and public safety rule-set (FPA 629-623, see email of January 5th) in which I had designated various steep slopes in several basins above neighborhood structures to require harvest modifications. Various leave areas and some additional wind-firm buffers were later designated by Stimson, which I reviewed. Those will be (are) locations which will remain timbered during the operation.

The meeting was arranged by yourself at the request of Mr. Kral in order to hear neighbors relate their knowledge of slides/sedimentation in the area, some of which directly related to the Lund residence. I am writing this to a wider audience, than I normally would, since there is a lot of interest in our processes. In my evaluation of Jan. 5th, I had recognized various slope stability features in the area, but I did not have direct knowledge of the events the neighbors related. I had designated the Lund residence as having a "Low" downslope public safety risk. Various risk levels require different administration of the upland harvest and I wanted to understand the events fully in case revision of the risk level was warranted.

History Related by Neighbors and Observations from the Walk and Orthophotos

Two important events occurred near the Lund residence. The earliest was in 1996 and another in 2007.

1) In 1996 a debris torrent came down drainage "D". This is the main drainage out of the north part of the harvest unit (see map included with my evaluation of Jan 5). On our walk, we noted the area where the stand age was reset in the depositional area evidenced by younger alder. The downslope edge of the young alder stand is about 300 feet above the home. Just above that point is where part of the debris split and followed two paths toward the Lund residence along two separate, shallow, ill-defined drainageways. In the area of the split drainage and below the area of stand reset, large trees remain in the buffer formerly left by harvest in the 80s. These two drainage-ways are shallow, about 3 feet deep, as they make their way past either side of the home.

   Perhaps concurrently with the deposition of most of the debris upslope, some forward momentum continued to deliver debris down these two little drainage-ways. Alternatively, shortly after the debris torrent came to rest, the stream reworked and redistributed a portion of the debris toward the home. Mr. Lund said mud and small sticks were deposited to the E and W of his home by overflowing the two drainage-ways by about 12 inches. The drive was covered and the stream-side edge of the hot tub deck posts were buried. No large woody debris was transported to the home.

2) The event of 2007 came out of the much smaller drainage directly N of the first event. This unit was harvested in winter of 2002-2003 and is outside the present unit in discussion, but its behavior may be

relevant to predicting impacts to the home. The deposit looks to be up to three feet thick in the main depositional area. The downslope edge of that area is about 100ft from the garage. As in the 1996 event, a portion of debris continued on from the main depositional area, following the slope down and through the small barn on the W edge of the drive to a depth of 8 to 12 inches. This pathway is separate from the other two mentioned in #1 above.

Discussion

Obviously the area is subject to slide activity as mentioned above. Other events were mentioned by neighbors to the southeast along the hill-front. Also, review of the terrain shows very large fan-like features below many of the drainages in the area. The one where the Lund residence is located contains scattered boulders below, near and upslope of the home. These are evidence of slide deposition, rather than of alluvial origin. While in the drainage, I noted large boulders in/on this feature. This fan has old growth stumps, which would put its deposition likely no later than about 400 years ago. It looks to be a debris field from some type of deep-seated, mega failure of the uplands. These features are discernable in many areas in the Coast Range and their foothills, between hill-fronts and valley bottoms and are poorly understood by geologists in their mechanism of failure and timing. They are however not of the variety of landslide that the public safety rules were developed upon. Those rules relate to "shallow rapidly moving landslides", generally initiated to depths comparable to the rooting depth of trees. Shallow, rapidly moving landslides can be initiated by forest practices [629-623-0000(1)] – thus the rule-set and the reason for my part in this. Slides also initiate in forested terrain not affected by forest practices, therefor structures located below steep drainages often have safety risk regardless of upland land use.

My visit to the area surrounding the Lund residence has not changed my evaluation of January 5th. In the context of the rule-set, the risk to public safety is "Low" at the Lund residence. The neighbors may wonder why if there is evidence of slide activity and sediment delivery, is my determination unchanged? The rules focus the analysis on serious bodily injury or death, not simply if a slide can occur or if there is chance of sediment delivery. In the introduction to the rules it states, 629-623-0000 (3):

The purpose of the shallow, rapidly moving landslides and public safety rules is to reduce the risk of serious bodily injury or death caused by shallow, rapidly moving landslides directly related to forest practices….

The reasons for my conclusion include:

1) The bulk of both events (2007 and 1996) terminated where they are expected to terminate, proximal to the loss of confinement, at the mouth of the gullies. The downslope edge of the bulk of material is still about 100 ft and 300 ft from the home, respectively. The home is about 550 ft from loss of confinement at both canyon mouths (to be clear, only the 1996 event originated from the unit in question while the 2007 event originated from a harvest area conducted in the winter of 2002-03).
2) The possible movement of a portion of material in the shallow drainage-ways does not carry the energy to transport trees/large wood (which can be very destructive), or to have the force needed to avulse its channel and seriously impact the home.
3) There are over 300 ft of large trees in the buffer below the unit that can slow and stop the movement of potential debris to the home.
4) From expected loss of confinement, the terrain is open and about 15% average slope. The drainageways are too shallow to provide adequate confinement to transport much debris.

If you have questions or need clarification please contact me.

Further Reading

Oregon Department of Forestry, Administrative Rules, Division 623 Shallow, Rapidly Moving Landslides and Public Safety. Available online at: https://secure.sos.state.or.us/oard/displayDivisionRules.action;JSESSIONID_OARD=Nf3AIMCnNlz1lt0QRFu8-X3AfRX5O5AMUeC0p__JY_EORbxPBV99!-1969788327?selectedDivision=2867

Oregon Department of Forestry, "High Landslide Hazard Locations, Shallow, Rapidly Moving Landslides and Public Safety: Screening and Practices, Forest Practices Technical Note Number 2, Version 2.0" (2003). https://www.oregon.gov/ODF/Documents/WorkingForests/HighLandslideHazardLocationsTechNote2.pdf

Oregon Department of Forestry, "Determination of Rapidly Moving Landslide Impact Rating, Forest Practices Technical Note Number 6, Version 1.0" (2003). Available online at: https://www.oregon.gov/ODF/Documents/WorkingForests/LandslideImpactRatingTechNote6.pdf

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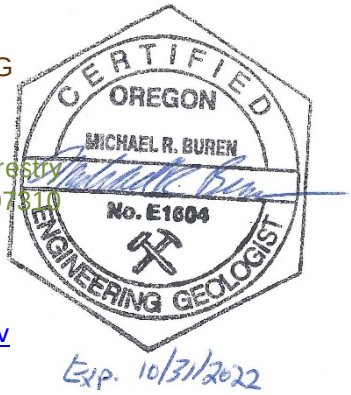

KRAWCZYK Joy P * ODF

From: BUREN Michael R * ODF
Sent: Wednesday, January 05, 2022 10:22 AM
To: JACOBS Eric D * ODF
Subject: Nordhl, Pre-Notification
Attachments: Nordhl.pdf; Guidance - ground-based operations on steep slope November 7 2018.docx

Eric,

I have conducted a Div. 623 review of the notification. The table and attached map show the summary of my analysis. You had referred the unit to me due to structures below steep slopes. On January 3rd we made a site visit to assess runout near "Home 5".

There will be no harvest modifications required due to Div 623 for Areas B and D (see map). Below Area B there are no structures and below Area D structures are distal to the gulley opening which results in a "Low" public safety risk.

Table 1: Analysis Summary, Nordhl, Pre-Notification
Refer to the map for Area and structure locations.

Area (see map)	High Landslide Hazard locations (HLHL) present?	Downslope Concerns	Exposure Category	Structure/Roads within Further Review Area?	Impact Rating	Downslope Public Safety Risk Level
A	Yes	Home 1	A	Yes	Serious	Substantial
		Shop, shed	C	Yes	Serious	Low
B	No	N/A	N/A	N/A	N/A	N/A
C	Yes	Home 5	A	Yes	Moderate	Intermediate
D	Yes	Home 7, outbuildings	A,C	Yes**	Unlikely	Low
		Home 6, outbuildings	A,C	Yes**	Unlikely	Low
E	Yes	Home 1	A	Yes	Moderate	Intermediate
		Shop, shed	C	Yes	Moderate	Low

Red text indicates issues requiring harvest modifications.
**Note: These structures not on obvious debris fans but it is assumed for sake of analysis.

Required Harvest Modifications for Area A

The attached map titled "Nordhl", shows the location of HLHLs in Area A which need consideration. These areas need to be left timbered and wind firm. Therefore site appropriate buffers may need to be designed to protect the trees on the HLHL locations from blowing down. These additional buffers do not need to be wind firm but are sacrificial, providing stability to the timber on the HLHL locations.

The following guidance should be considered when looking into the wind firmness issue. It is taken from ODF Div 623 guidance: ***Operators should be aware that windthrow may be a factor contributing to shallow, rapidly moving landslides. The operator should consider the wind firmness of trees that are to be left on high landslide hazard locations and will likely need to leave additional trees outside the boundaries of the unharvested area to reduce windthrow hazard to retained trees. Crown and bole characteristics, exposure to prevailing storm winds, topographic effects, relative height of trees, and species mix (conifer/hardwood) should be evaluated when determining harvest unit boundaries when high landslide hazard locations are present.***

The required written plan should have a brief discussion of the reasons behind the design of the additional wind buffers, if they are needed.

Required Harvest Modifications for Area C

The attached map shows the location of HLHLs in Area C which need consideration. HLHLs in Area C should be left timbered. Additional wind firmness is not required by the rules.

Required Harvest Modifications for Area E

The attached map shows the location of HLHLs in Area E which need consideration. HLHLs in Area E are located above an additional partly confined and less steep section of terrain than HLHLs lower down in Area A. Therefore I have applied a public safety risk of Intermediate to those HLHLs resulting in less restrictive requirements. These areas should be left timbered. Additional wind firmness is not required by the rules.

I would recommend all the polygons I have mapped with intermediate public safety risk remain timbered in Areas E and C. A reading of the intermediate-related Div. 623 rules, however, does not require the operator to leave more than one-half of the intermediate HLHL acreage timbered. There has been important discussion over the years that the Intermediate rules lack efficacy, and need revision. If you want more discussion on that let me know, but it would be good to work with the operator to make accommodations to leave these sites.

Notes on cable-assisted, ground-based (tethered) Operations

You had said the operator mentioned the possibility of using tethered machinery. For cable assisted ground-based machinery, slopes over 60% should be avoided in Areas A, C and E, which have downslope public safety concerns. Requests for a Plan for Alternate Practice (PFAP) for cable assisted ground-based operations will not be granted in these basins (guidance) for operation on slopes >60%. Additional resource-based issues exist for cable assist operations in the other areas which should be discussed in the event the operator/land owner is considering these types of equipment. Those pertinent rules typically involve **ground-based operations on steep or erosion prone slopes** (Div. 630-150 and 630-0500, see attached guidance document).

Written Plan

A written plan will be required for this unit due to the Div. 623 issues. This memo should be referenced, along with additional discussion about windfirm buffer layout associated with the Substantial risk HLHLs in Area A. A map of the wind buffering scheme should also be included.

Locations of HLHL have been located from Lidar. If operators field verify boundaries of HLHL which vary from the attached map, an updated map showing changes should be submitted with the written plan.

Mike Buren MS, CEG
Geotechnical Specialist
Planning Unit
Oregon Department of Forestry
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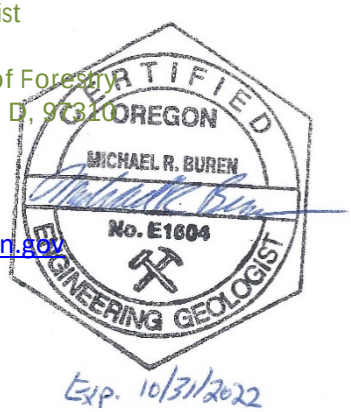

KRAWCZYK Joy P * ODF

From: George Kral <george@schollsvalley.com>
Sent: Friday, March 04, 2022 3:56 PM
To: BUREN Michael R * ODF
Cc: CAFFERATA Mike J * ODF; llchinook@aol.com; Alan Bonebrake; Laurie Lundy; SWEENEY David; JACOBS Eric D * ODF; PERKINS Eric * ODF
Subject: Slides in Spring Branch headwall
Attachments: 0220221556_HDR.jpg; 0220221557.jpg; 0220221558_HDR.jpg; 0220221603.jpg

Hi Mike

Since you did not make it to the upper part of the canyon, I thought the attached might add some insights. This slide happened probably in late December or January in that little 2-year rain event. It is pointed right down Spring Branch

I took these on Feb 20.

-George

George Kral, Ph.D.
Forester & Botanist
Scholls Valley Native Nursery LLC

george@schollsvalley.com
https://www.schollsvalley.com/
4036 NW Half Mile Ln, Forest Grove, OR 97116

KRAWCZYK Joy P * ODF

From: JACOBS Eric D * ODF
Sent: Monday, March 07, 2022 4:19 PM
To: George Kral
Cc: PERKINS Eric * ODF; CAFFERATA Mike J * ODF; Alan Bonebrake; llchinook@aol.com; SWEENEY David; BUREN Michael R * ODF
Subject: RE: Follow-up from 3/2/22 Visit

Hi George,
Thank you for the time and commitment that you have continued to provide as we have worked through the review of the findings thus far. At this point, the division rules (629-632-0000) for evaluating landslide and public safety has been completed along with a subsequent review of the original findings, with no change to the original designations in place. While I am sorry to hear that my last email was not able to provide all of the answers you are seeking, at this point we need you to go through the public records request process in order to accurately capture all of the information that you are looking for. A formal request can be submitted by visiting the ODF webpage, here and following the link at the bottom of the page.

Thank you and best regards,

Eric Jacobs
Stewardship Forester
Forest Grove District
Oregon Department of Forestry
Office: 503-359-7439
Cell: 971-701-3649

From: George Kral <george@schollsvalley.com>
Sent: Monday, March 07, 2022 10:41 AM
To: JACOBS Eric D * ODF <Eric.D.JACOBS@odf.oregon.gov>; BUREN Michael R * ODF <Michael.R.BUREN@odf.oregon.gov>
Cc: PERKINS Eric * ODF <Eric.PERKINS@odf.oregon.gov>; CAFFERATA Mike J * ODF <Mike.J.CAFFERATA@odf.oregon.gov>; Alan Bonebrake <alanbonebrake@gmail.com>; llchinook@aol.com; SWEENEY David <dsweeney@stimsonlumber.com>; MUKUMOTO Cal T * ODF <Cal.T.MUKUMOTO@odf.oregon.gov>
Subject: Re: Follow-up from 3/2/22 Visit

Hi Eric D and Mike B

My apologies for the leading and open-ended questions. I have been working non-stop the past four months and at the end of the week last week should have taken more time to craft a better message. I'll try to be more clear going forward.

It seems like we have an opportunity here to take advantage of a recent known debris flow, which gives us a baseline to project possible future events. Some things we know, or can know, about this actual debris flow are the nature and frequency of the precipitating weather event, the volume and extent of the debris flow, and the condition of the vegetation in the canyon at the time of the debris flow. The investigation could go as far as identifying the headwall source(s) of the 1996 event and then attempting to identify potential sources and sizes of additional slides/flows. We could then model future flows based on various management scenarios. Maybe there are ways to mitigate these future events and still log part of the remaining timber, maybe there are not. Given what's at stake, it seems like it would be good to explore this more deeply than maybe you have so far.

Specific questions: could you share your full report, including whatever model you used to calculate risks? Could you also share more specifics on the risks themselves? In other words, from ODF's point of view, what is a "low" vs "moderate" risk? What were the worst-case scenarios under any of your debris flow risk assessments for this particular logging unit?

I appreciate your time coming out to look at the site and reviewing your methods and findings so far. I understand that these are complex resources to model. Fortunately, in this case, we have some good bases for model refinement and future projections.

Best regards,
-George

George Kral, Ph.D.
Forester & Botanist
Scholls Valley Native Nursery LLC

george@schollsvalley.com
https://www.schollsvalley.com/
4036 NW Half Mile Ln, Forest Grove, OR 97116

On Friday, March 4, 2022, 04:36:03 PM PST, George Kral <george@schollsvalley.com> wrote:

Hi Eric and Mike B.

I am wondering if you heard the anecdote that Alan Bonebrake shared about the farm field down on Oppenlander that was buried under logs, stumps and boulders post-logging, sometime ~1920? Is this not what we are talking about?

In my review of post-logging slides and associated debris flows in the Coast Range, flow size may be 2X or more than in undisturbed watersheds. You state that the major deposits of the Feb 1996 debris flow stopped 100 feet above the house, which suggests the flow continued 450 feet beyond the loss of confinement. I assume the relationship is not a linear one, so how far would you expect a flow to progress if it were 1.5 X, 2X or more the size of the 1996 flow? This is what needs to be assessed. In 1996, the entire basin was covered in timber. Under the current plan, the large majority of the basin will be bare of trees.

For review, the causes of increased slides in clearcuts, aside from roads and direct logging impacts, include loss of interception by trees, loss of transpirational surface that draws deep soil moisture, and loss of root strength and structure. Am I incorrect? if you have any studies that show something different, could you share them?

I am still searching for the study that ODF commissioned after the debris flow that occurred on Rock Creek near Millwood in November 1996. If anyone can find this, it would be helpful since the slopes, elevations and basin size are very similar.

thanks,
-George

George Kral, Ph.D.
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george@schollsvalley.com
https://www.schollsvalley.com/
4036 NW Half Mile Ln, Forest Grove, OR 97116

On Friday, March 4, 2022, 03:25:33 PM PST, JACOBS Eric D * ODF <eric.d.jacobs@odf.oregon.gov> wrote:

Hello Larry,

Before we departed from your home this past Wednesday, Mike Buren (ODF Geotech) had mentioned wanting to take some time to review his notes and all of the information that you (and the neighbors) kindly shared with him. Following this process, he has informed me of his recent evaluation of this information which I would like to briefly share with you.

In his initial evaluation (dated January 5th 2022), Mr. Buren had designated your residence as having a “Low” downslope public safety risk based on his recognition of various slope stability features in the area. The purpose of our meeting this week was to allow Mr. Buren the opportunity to understand fully the two events that you and neighbors described to him, should a revision of the risk level be warranted. After review of the event descriptions and the visit to the area around your home on 3/2/22, the evaluation on January 5th has not changed. In the context of the rules, the risk to public safety remains “Low” at your residence.

Mr. Buren's main points for providing this conclusion include:

1. The bulk of both events (2007 and 1996) terminated where they are expected to terminate, proximal to the loss of confinement, at the mouth of the gullies. The downslope edge of the bulk of material is still about 100 ft and 300 ft from the home, respectively. The home is about 550 ft from loss of confinement at both canyon mouths (to be clear, only the 1996 event originated from the unit in question while the 2007 event originated from a harvest area conducted in the winter of 2002-03).
2. The possible movement of a portion of material in the shallow drainage-ways does not carry the energy to transport trees/large wood (which can be very destructive), or to have the force needed to avulse its channel and seriously impact the home.
3. There are over 300 ft of large trees in the buffer below the unit that can slow and stop the movement of potential debris to the home.
4. From expected loss of confinement, the terrain is open and about 15% average slope. The drainageways are too shallow to provide adequate confinement to transport much debris.

The terrain that reveals the large fan-like feature below the drainage, where your house is located, also contains old growth stumps and large boulders in/on the deposition feature. Mr. Buren indicated that this points to a much older event and is likely from a much larger, deep-seated failure of the uplands. It is important to remember that, while these larger features may be discernable throughout much of the Coast Range, they are not the type of landslide that the public safety rules were developed upon. The rule-set (629-623-0000(1)) was developed to focus on *shallow, rapidly moving landslides*, generally initiated by forest practices at depths similar to root depth of trees. While it is apparent that the area is subject to slide activity, the rule-set was developed to focus on the analysis of serious bodily injury or death related to shallow, rapidly moving landslides, not simply if a slide can occur or if there is a chance of sediment delivery.

Due to the nature of our meeting being focused more around your home, I have just included yourself and George in this email. However, please feel free to share this information with any and all whom were present or may be interested to hear more.

If you have any further questions related to this please be sure to let me know.

Thank you,

Eric Jacobs

Stewardship Forester

Forest Grove District

Oregon Department of Forestry

Office: 503-359-7439

Cell: 971-701-3649

KRAWCZYK Joy P * ODF

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Sent: Friday, March 04, 2022 4:36 PM
To: JACOBS Eric D * ODF; BUREN Michael R * ODF
Cc: PERKINS Eric * ODF; CAFFERATA Mike J * ODF; Alan Bonebrake; llchinook@aol.com
Subject: Re: Follow-up from 3/2/22 Visit

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Thank you,

Eric Jacobs

Stewardship Forester

Forest Grove District

Oregon Department of Forestry

Office: 503-359-7439

Cell: 971-701-3649

KRAWCZYK Joy P * ODF

From: HOWARD Sam
Sent: Thursday, February 24, 2022 9:03 AM
To: PERKINS Eric * ODF
Cc: BUREN Michael R * ODF; JACOBS Eric D * ODF; SWEENEY David; GRAY Scott
Subject: RE: Information for the Nordgren HL unit

Eric,

Thank you for the update.

The unit to the northeast was logged and planted before we owned the Nordgren Tract. We do not have any information if that area is leave trees, RMA or HLHL. Our GIS layer has it typed out as RMZ (RMA or stream side leave trees.)

Thank you,

Samuel

From: PERKINS Eric * ODF <Eric.PERKINS@odf.oregon.gov>
Sent: Wednesday, February 23, 2022 4:54 PM
To: Sam Howard <showard@stimsonlumber.com>
Cc: BUREN Michael R * ODF <Michael.R.BUREN@odf.oregon.gov>; JACOBS Eric D * ODF <Eric.D.JACOBS@odf.oregon.gov>
Subject: External- Information for the Nordgren HL unit

External email From: PERKINS Eric * ODF <eric.perkins@odf.oregon.gov**>**

Hi Samuel,

Eric Jacobs, Michael Buren, & I had a phone conversation George Kral & Larry Lund today. During that conversation Larry referenced a debris flow event that happened around 20 years ago.

Michael Buren is looking for some historical information in regards to buffer left on the newly designated Type D stream to the north of the Nordgren HL unit south of the Lund property. Do you know if that buffer was left from previous HLHL requirements? Michael is wanting to look at where those historical slides originated. If you need to pass this question to Dave Sweeney feel free to add him to the email.

Thank you,

Eric Perkins
Protection Unit Forester
Forest Grove District
eric.perkins@odf.oregon.gov
O (503) 359-7450
C (503) 784-2865

KRAWCZYK Joy P * ODF

From: BUREN Michael R * ODF
Sent: Friday, February 04, 2022 9:09 AM
To: JACOBS Eric D * ODF
Subject: RE: Nordgren HLHL

Looks like it will meet the rules and followed my memo.

From: JACOBS Eric D * ODF <Eric.D.JACOBS@odf.oregon.gov>
Sent: Thursday, February 03, 2022 1:56 PM
To: BUREN Michael R * ODF <Michael.R.BUREN@odf.oregon.gov>
Subject: Nordgren HLHL

Hi Mike,
Just wanted to check in with you about that Stimson HLHL unit outside of Forest Grove. I met with Sam again to look at the unit layout and buffers before he finalized his plans for the notification, which has now been submitted (2022-531-01917). I just wanted to check in with you to see if you wanted or needed to take another look at this now the plan and everything are done? If not, I can proceed with the final review/processing, just wanted to make sure I kept you in the loop as much as needed.

Thanks,

Eric Jacobs
Stewardship Forester
Forest Grove District
Oregon Department of Forestry
Office: 503-359-7439
Cell: 971-701-3649

KRAWCZYK Joy P * ODF

From: BUREN Michael R * ODF
Sent: Thursday, February 24, 2022 2:10 PM
To: JACOBS Eric D * ODF
Cc: PERKINS Eric * ODF
Subject: RE: Nordgren Riparian Area w/ HLHL

Eric,
You should run this stuff by Keith Baldwin if you haven't already brought him into the discussion.
Issues:

1) From a debris torrent perspective, it is to better remove the trees if you can do it without damaging live trees that are required to be standing. Secondly, from a debris torrent standpoint, we wouldn't want timber there to be swept up in a torrent because that can make it much more destructive downstream.
2) Wood loading of a channel can create additional destructive risk when lots of organic debris builds up along the channel, that can temporarily hold water in large storms and then release it catastrophically (organic dam-break floods).
3) However, from a fish perspective, if the trees were supposed to be part of an rma for ecological reasons, then once dropped they should remain on the ground.

Honestly, I don't know how the rules would direct you on this. Keith would likely know.

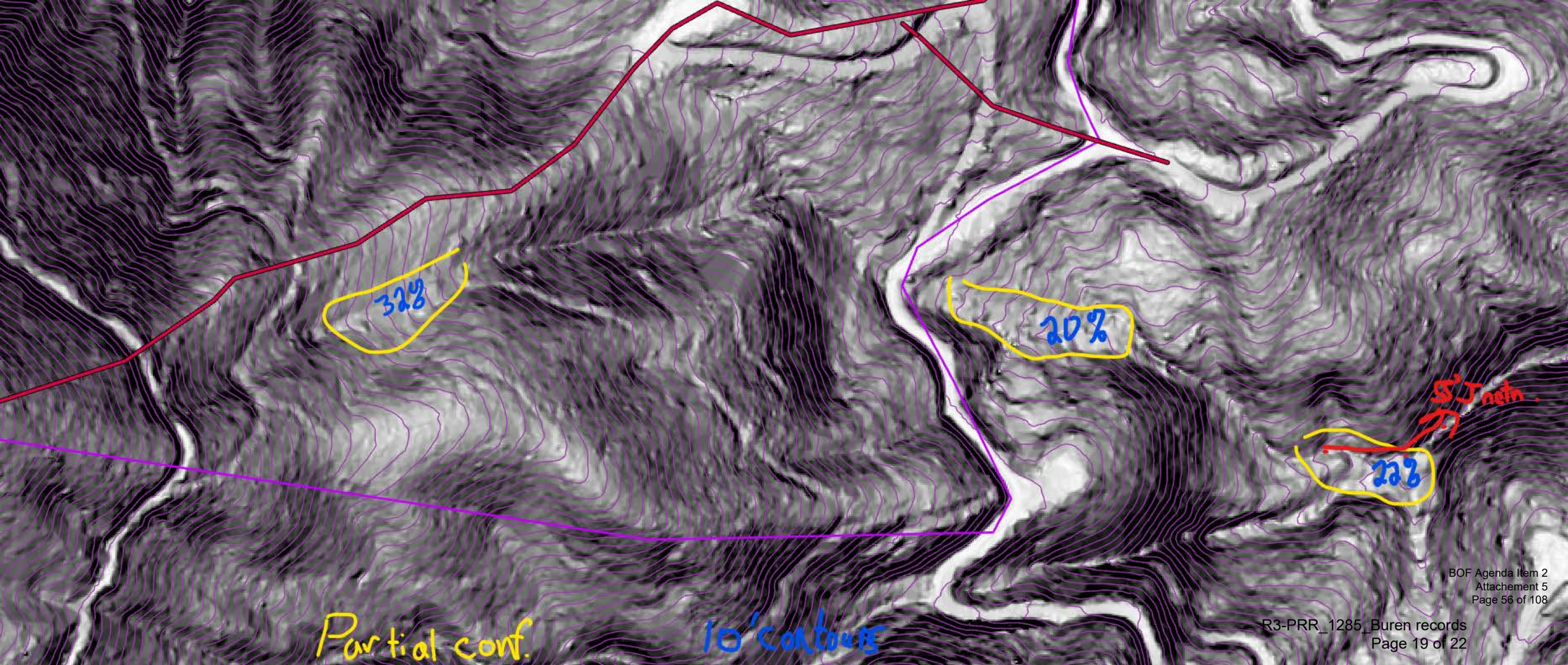
From: JACOBS Eric D * ODF <Eric.D.JACOBS@odf.oregon.gov>
Sent: Thursday, February 24, 2022 12:31 PM
To: BUREN Michael R * ODF <Michael.R.BUREN@odf.oregon.gov>
Cc: PERKINS Eric * ODF <Eric.PERKINS@odf.oregon.gov>
Subject: Nordgren Riparian Area w/ HLHL

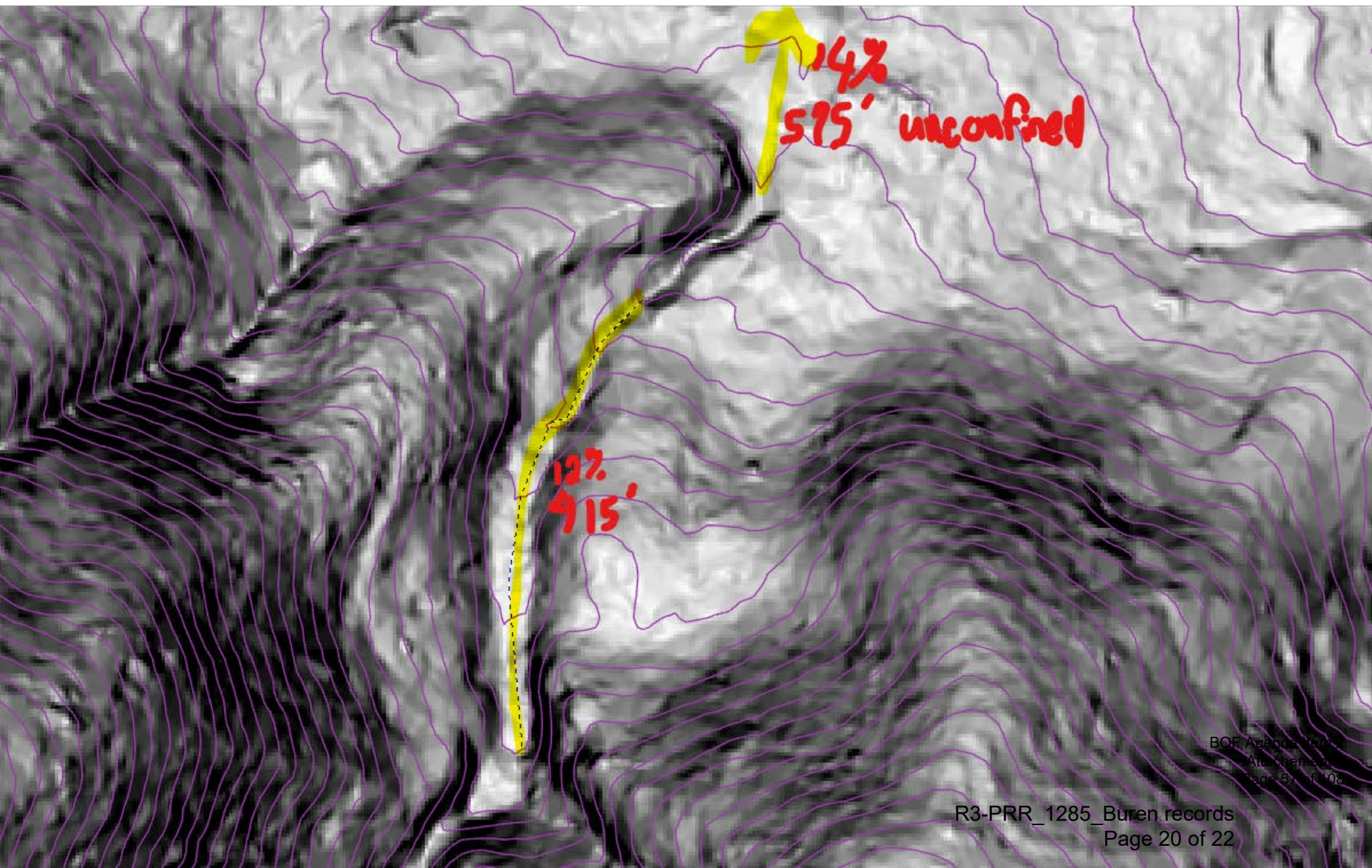
Hey Mike,

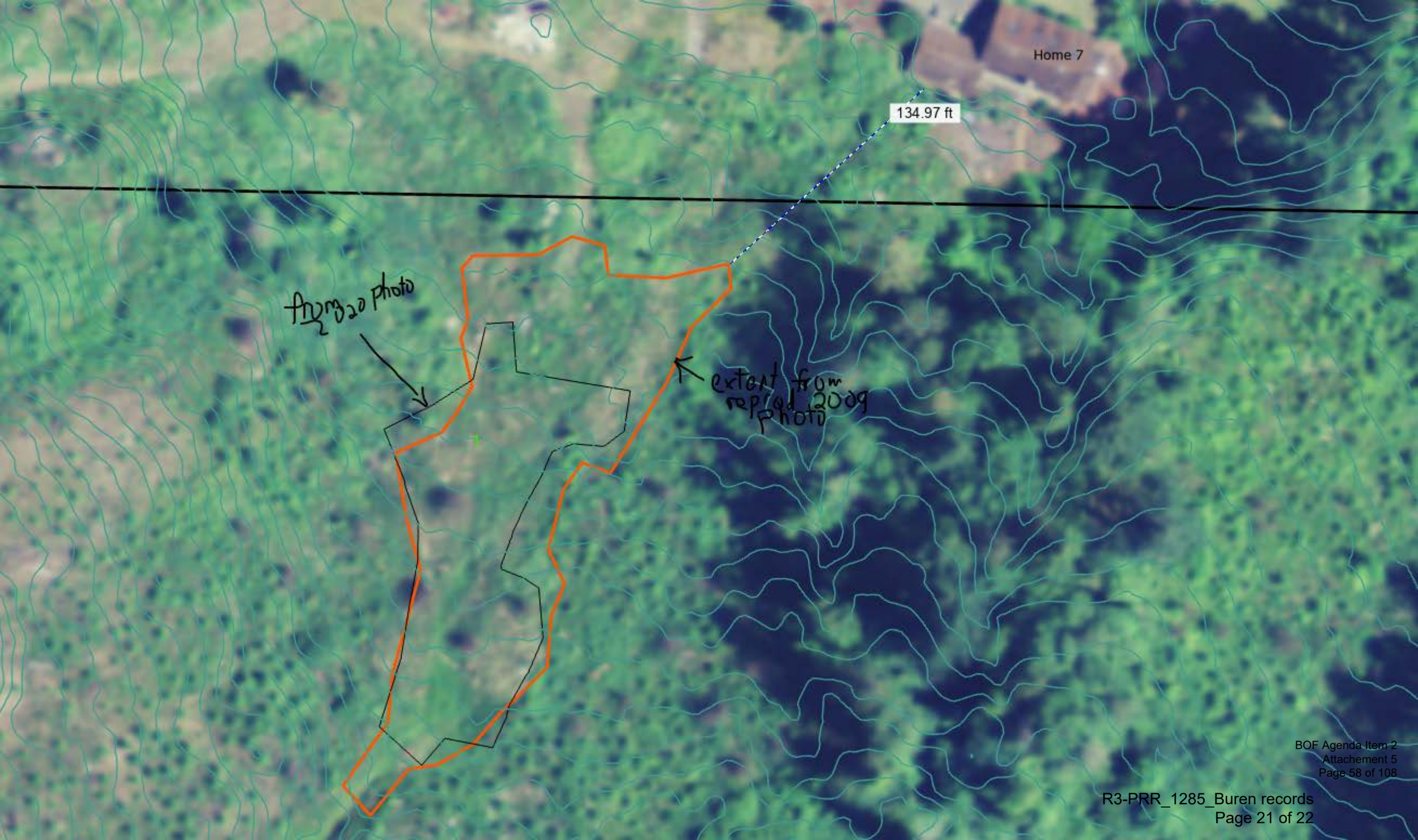
The Stimson Forester posed a question about the removal of trees that were already cut within the Type D stream (and which include areas of HLHL).
Do you know of any concerns from a potential slide or other HLHL standpoint that would suggest/require those trees be left where felled in any of those areas? (specifically talking areas +/- 20' from the stream channel)
See the attached maps for reference to where those cut areas are (approximately)?

If this is a call better determined on site or you have any questions let me know.
Thanks,

Eric Jacobs
Stewardship Forester
Forest Grove District
Oregon Department of Forestry
Office: 503-359-7439
Cell: 971-701-3649


32%
20%
22%
St Joseph
Partial conf.
10' Contours




Home 7
134.97 ft
from 2020 photo
extent from repeat photo 2009


Stand-age Reset
334.72 ft
Likely Bulk of d.f.
Natural d.f. Levee
1,005.12
194°
334.72 ft

Scale:1"=500'

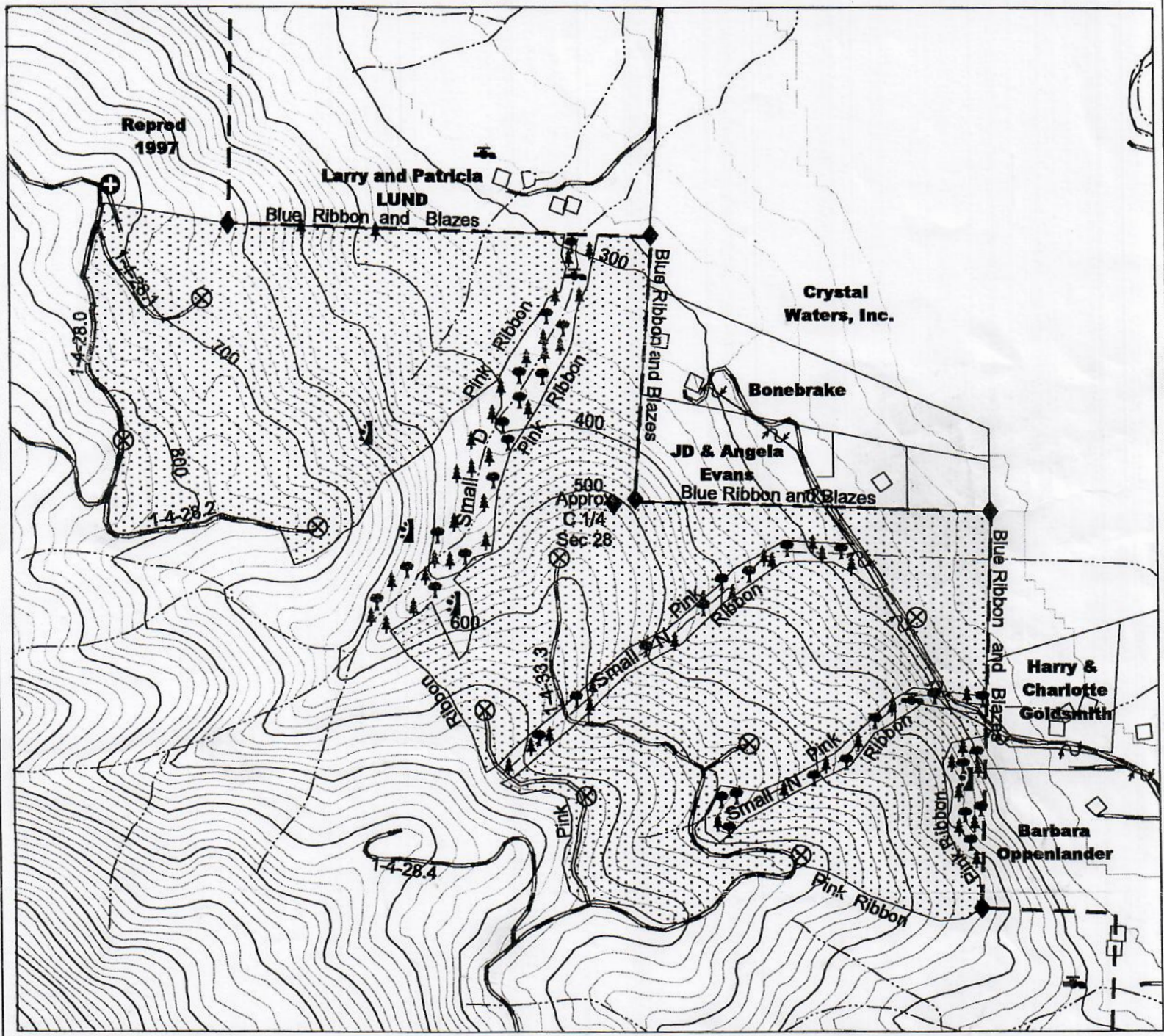
Weyerhaeuser

Timber Harvest and Management Plan

UNIT MAP
RODERICK VIEW
T3109
Revised 10/29/02

Lat.: 45-32-41 N Sec.: 28 T.: 1 N R.: 4 W

Long.: 123-11-35 W Notification: Date: 10/2/02



Legend:

- Paved
- Gravel
- Dirt
- Gate
- Quarry/Rock Pit
- Wey Co. Ownership
- PLS Line
- PLS Corner
- Intake
- Stream
- High Risk Area
- Powerline
- Harvest Unit T0164
- Stream Buffer
- Recently Harvested
- Wildlife/Leave Trees
- Landings

Unit Summary

Clear cut Acres	81.2
Leave Tree Acres	5.2
RMA Acres	9.5
Road Acres	1.9
Total Acres	98.5

Scale: 1" = 500'

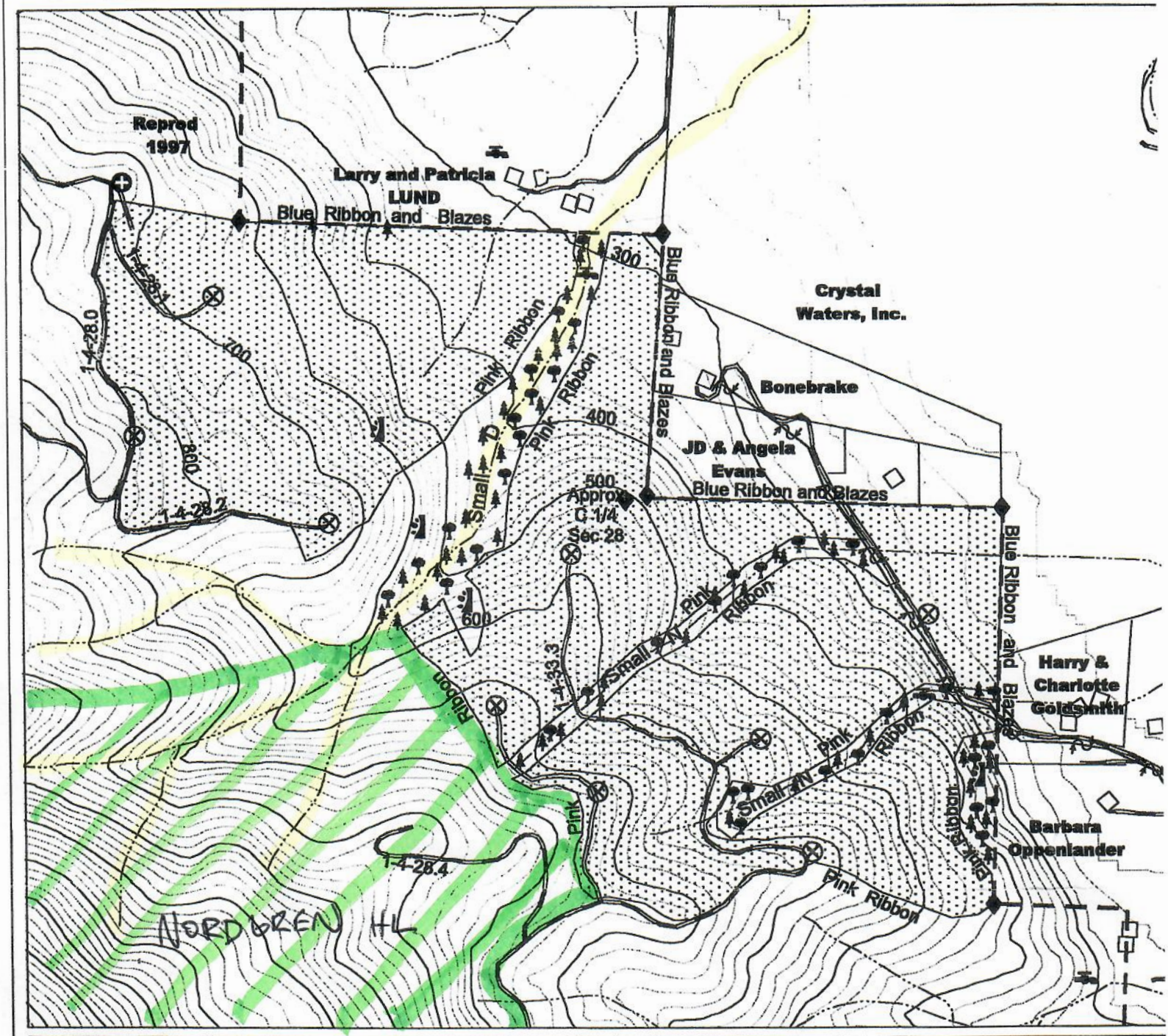
Weyerhaeuser

Timber Harvest and Management Plan

UNIT MAP
RODERICK VIEW
T3109

Lat.: 45-32-41 N Sec.: 28 T.: 1 N R.: 4 W Revised 10/29/02

Long.: 123-11-35 W Notification: Date: 10/2/02



Legend:

- Paved
- Gravel
- Dirt
- Gate
- Quarry/Rock Pit
- Wey Co. Ownership
- PLS Line
- PLS Corner
- Intake
- Stream
- High Risk Area
- NORDGREN HL
- Powerline
- Harvest Unit T0164
- Stream Buffer
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Clear cut Acres	81.2
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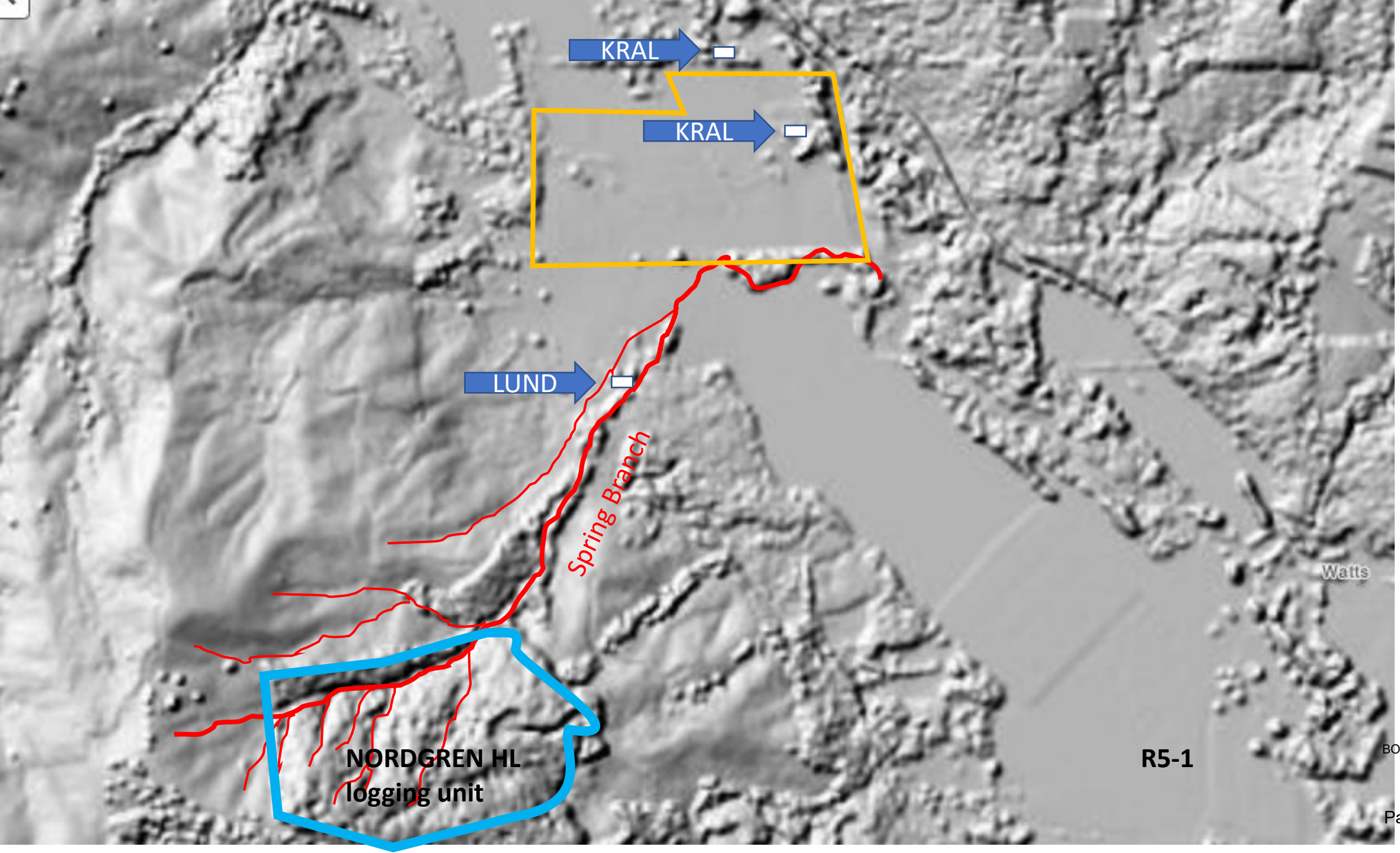
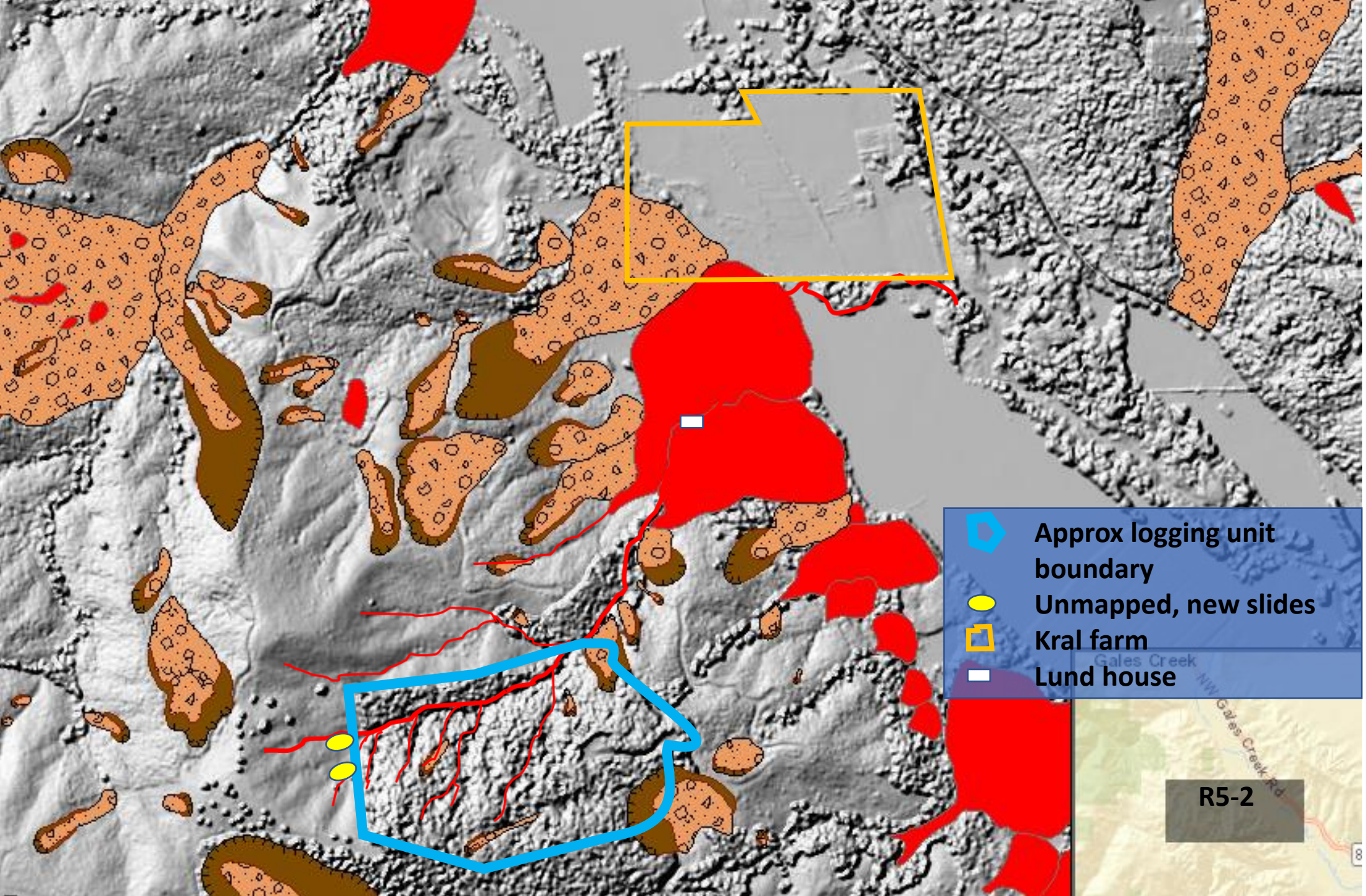
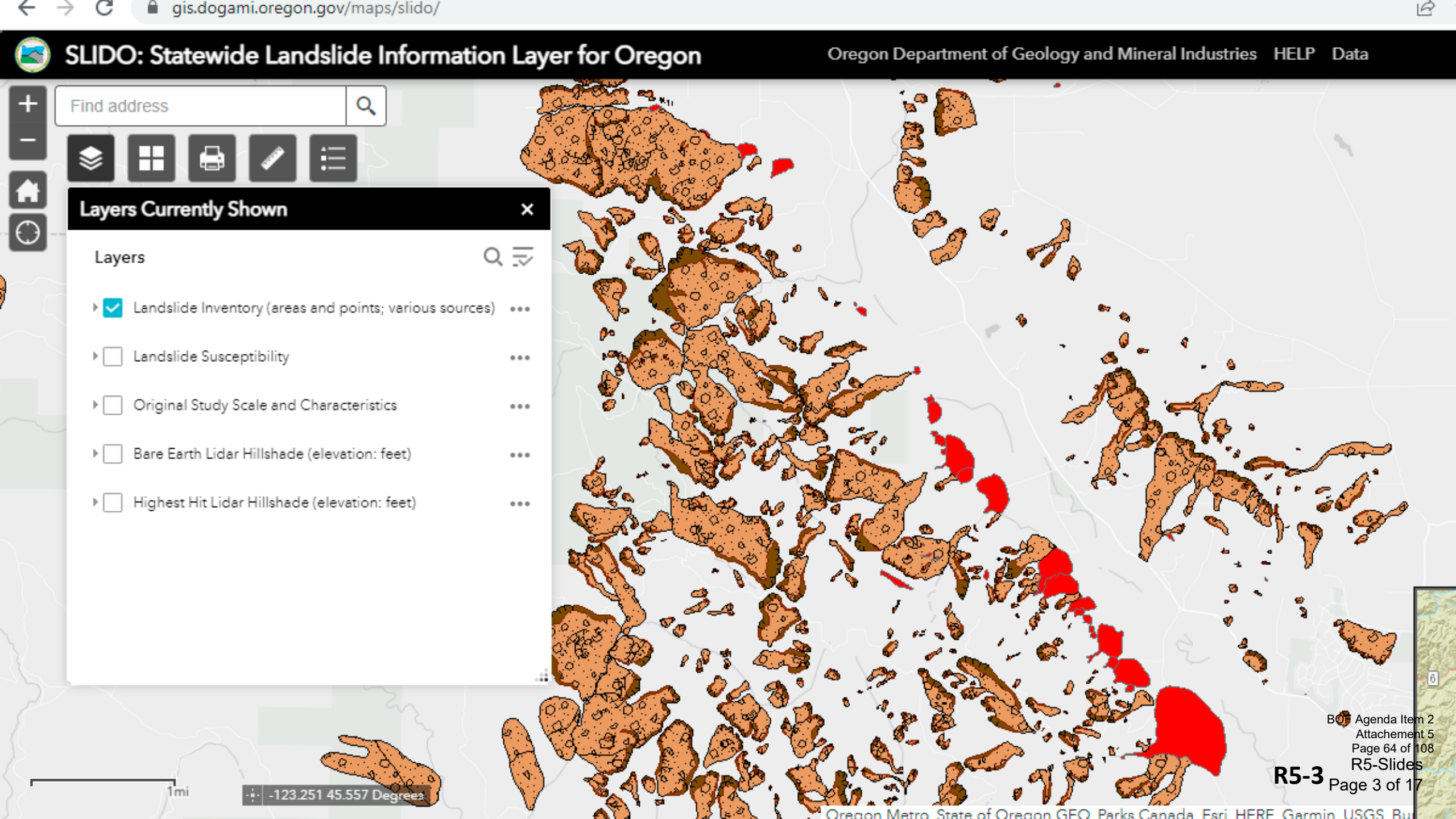
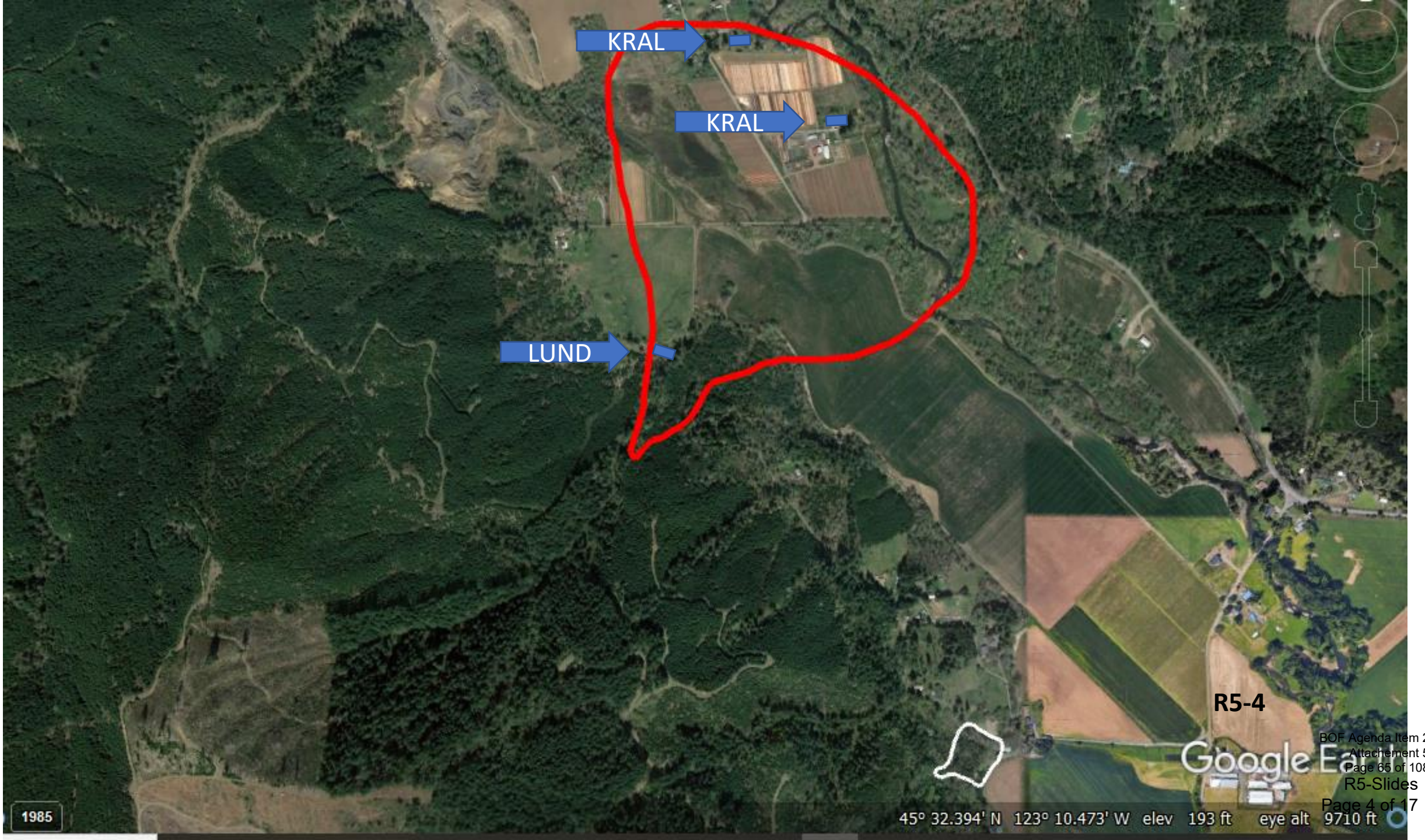
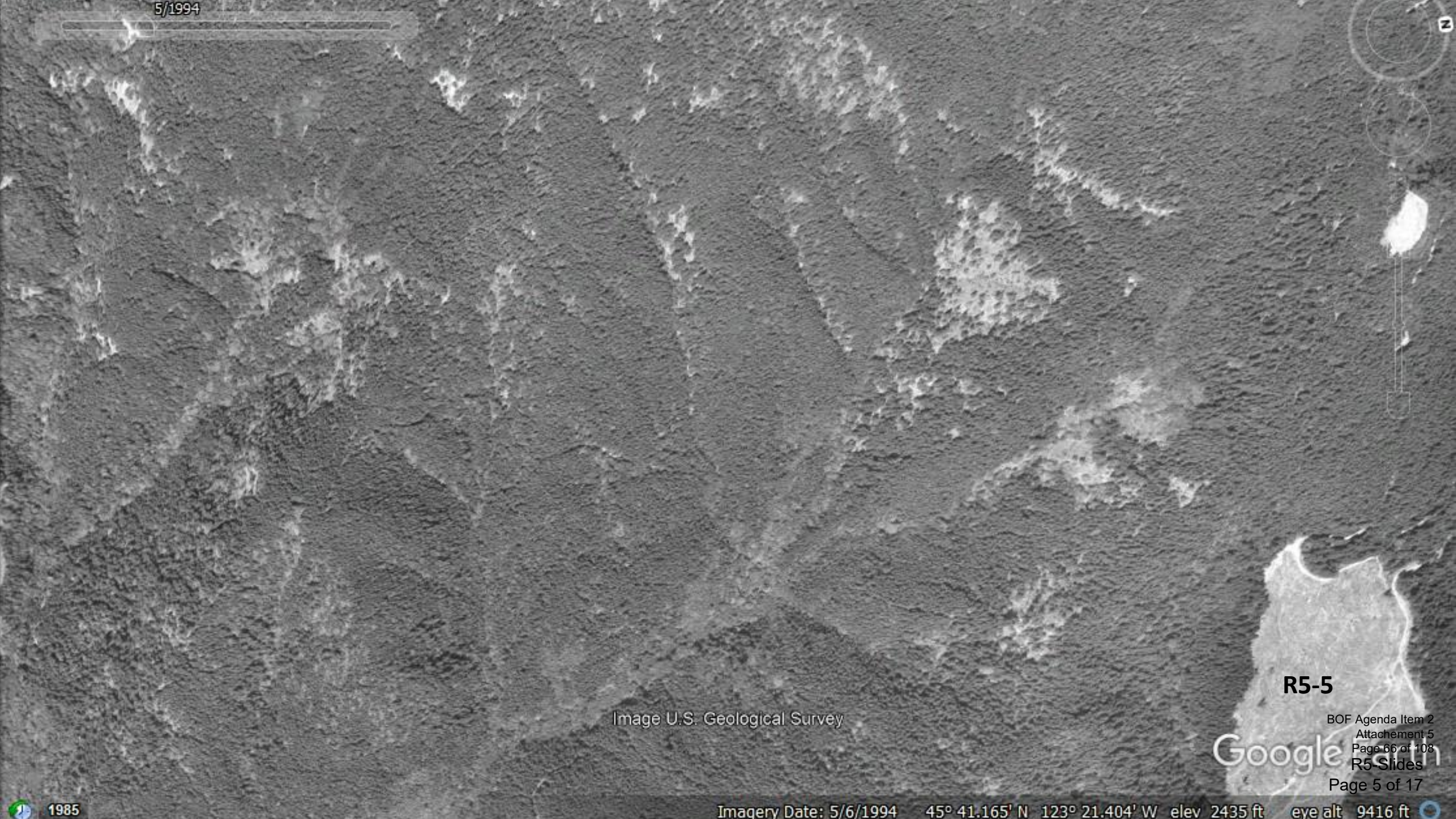

KRAL
KRAL
LUND
Spring Branch
Watts
NORDGREN HL
logging unit
R5-1


Approx logging unit boundary
Unmapped, new slides
Kral farm
Lund house
Gales Creek
NW Gales Creek Rd
R5-2


gis.dogami.oregon.gov/maps/slido/
SLIDO: Statewide Landslide Information Layer for Oregon
Oregon Department of Geology and Mineral Industries
HELP
Data
Find address
Layers Currently Shown
Layers
Landslide Inventory (areas and points; various sources)
Landslide Susceptibility
Original Study Scale and Characteristics
Bare Earth Lidar Hillshade (elevation: feet)
Highest Hit Lidar Hillshade (elevation: feet)
1mi
-123.251 45.557 Degrees
Oregon Metro, State of Oregon GEO, Parks Canada, Esri, HERE, Garmin, USGS, Bu


KRAL
KRAL
LUND
R5-4
1985
45° 32.394' N 123° 10.473' W elev 193 ft eye alt 9710 ft


5/1994
Image U.S. Geological Survey
1985
Imagery Date: 5/6/1994 45° 41.165' N 123° 21.404' W elev 2435 ft eye alt 9416 ft

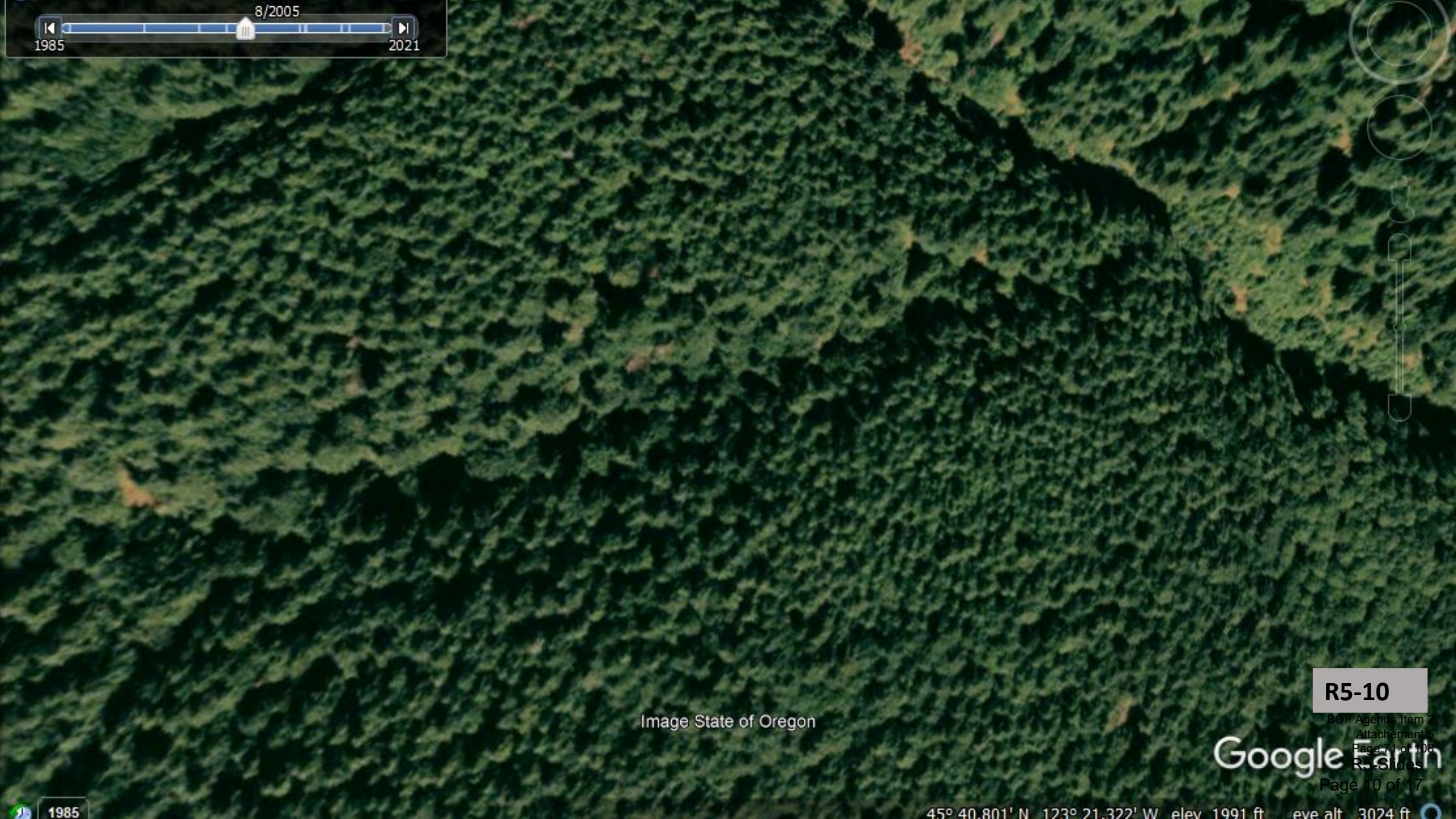
R5-5


7/2012
1985
2021
1
2
3
4
5
6
7
8
Image © 2022 Metro, Portland Oregon
Google Earth

R5-6


4/2021


4/2021
1985
Imagery Date: 4/15/2021 45° 40.850' N 123° 21.425' W elev 2220 ft eye alt 3048 ft
Google Earth


8/2005
1985
2021
Image State of Oregon
Google Earth
1985
45° 40.801' N 123° 21.322' W elev 1991 ft eye alt 3024 ft

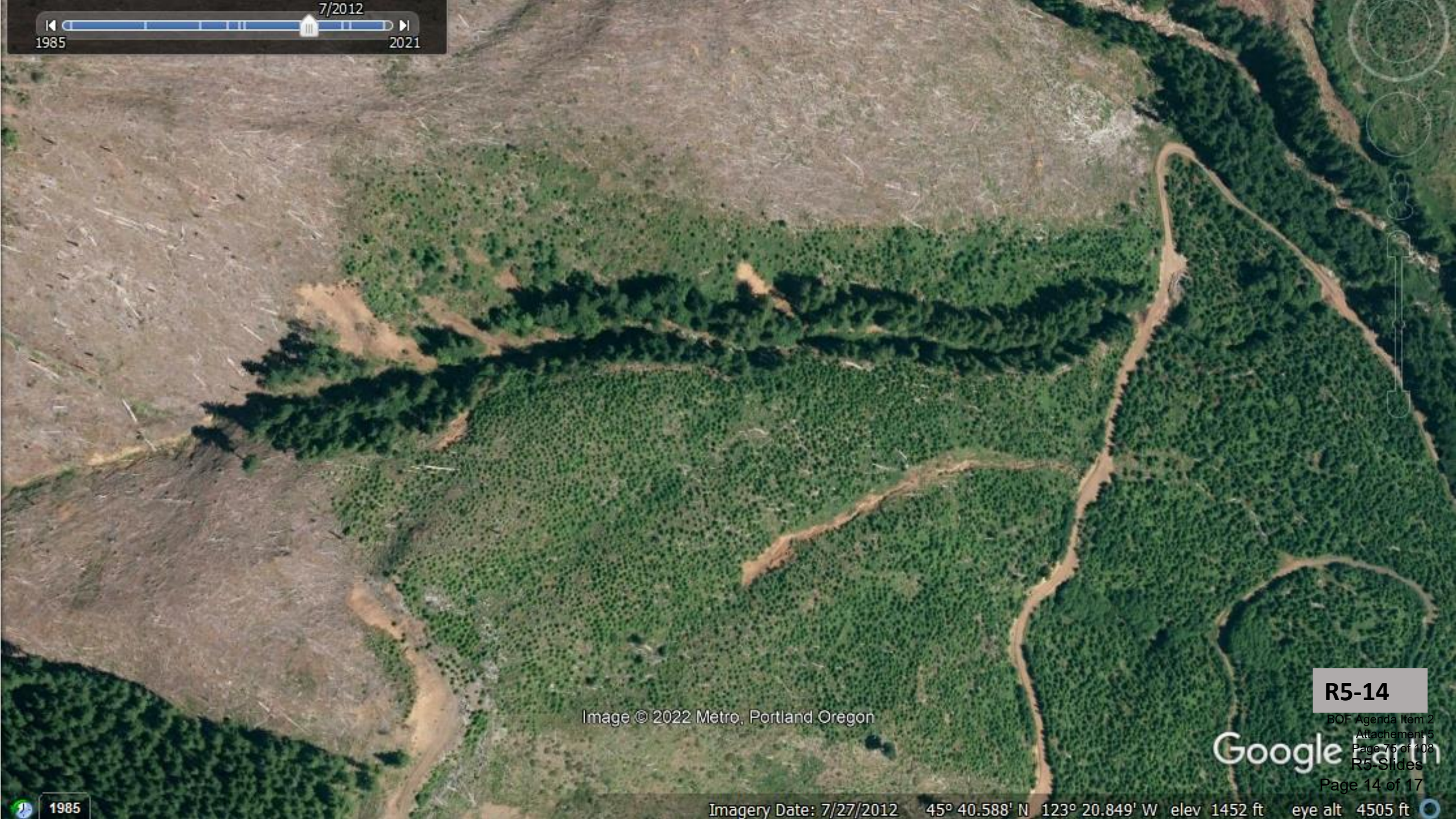
R5-10


11/2011
Image USDA/FPAC/GEO
Google Earth
1985
Imagery Date: 8/1/2011 45° 40.768' N 123° 21.206' W elev 1806 ft eye alt 3024 ft


7/2012
1985
Imagery Date: 7/6/2012 45° 40.692' N 123° 20.991' W elev 1526 ft eye alt 3024 ft
Google Earth


4/2021
1985
Imagery Date: 4/15/2021 45° 40.747' N 123° 21.160' W elev 1763 ft eye alt 3024 ft
Google Earth

R5-13


7/2012
1985
2021
Image © 2022 Metro, Portland Oregon
Google Earth
1985
Imagery Date: 7/27/2012 45° 40.588' N 123° 20.849' W elev 1452 ft eye alt 4505 ft

R5-14


7/2012
1985
Imagery Date: 7/6/2012 45° 40.473' N 123° 21.200' W elev 2035 ft eye alt 4505 ft
Google Earth

R5-15


4/2021
1985
2021
New slide
1985
Imagery Date: 4/15/2021 45° 40.219' N 123° 21.186' W elev 1554 ft eye alt 4399 ft
Google Earth

R5-16

R5-17

Oregon Board of Forestry Meeting
State Forester's Headquarters
Protection Conference Room
2600 State Street, Salem, Oregon

Friday, April 19, 2002

Board of Forestry Forum

8:00 - 8:30	*	Staff Overview of Implementation Plan Issues	Ross Holloway, Mike Bordelon
8:30 - 9:30	*	Board Q&A	Invited Panel
9:30 - 9:50	*	Focus Group Facilitators - Presentation	Facilitators
9:50 - 10:10	*	NW/SW FMP Advisory Committee - Background & Process	Mike Bordelon, Jim Willis
10:10 - 10:20		Break	
10:20 - 10:55	*	Forest Trust Land Advisory Committee Comments	Mike Propes, Steve Thomas
10:55 - 12:00	*	Board Discussion	Dave Gilbert, Jim Brown
12:00 - 1:00		Lunch	

Public Business Meeting

1:00 - 1:15		1. State Forester's Comments	Jim Brown
		1A. E-Board Request - Forest Inmate Crew Coordinators	Steve Thomas
		1B. 2001-03 Budget - Status Report	Clark Seely
1:15 - 1:16		2. Minutes – March 6, 2002 Board Meeting	Dave Gilbert
1:16 - 1:25		3. Findings and Economic Analysis of Forest Practices Draft Landslides and Public Safety Rules	Keith Mills
1:25 - 1:45		4. Findings and Economic of Forest Practices Draft Roads Rules Revisions	Keith Mills
1:45 - 2:35		5. *2003 Forestry Program for Oregon* - Goal 4: Protect, Maintain and Restore Soil and Water Resources	David Morman, Jim Paul, Joe Misek
2:35 - 2:45		Break	
2:45 - 3:35		6. *2003 Forestry Program for Oregon* - Goal 5: Maintain and Enhance Forest Contributions to Global Carbon Cycles	David Morman, Jim Cathcart, Joe Misek
3:35 - 4:05		7. 2003-05 Legislative Concepts	Ted Lorensen
4:05 - 4:35		8. 2003-05 Budget Overview	Marti Graham, Clark Seely
4:35 - 5:05		9. Public Comments	
5:05 - 5:15		Break	
5:15 - 5:25	*	**EXECUTIVE SESSION [Closed]** Consultation regarding legal rights and duties with reference to current litigation or litigation likely to be filed [ORS 192.660(1)(h)]	Ian Whitlock
5:25 - 5:40	*	10. Thomas Creek Lumber Final Order	Charlie Stone

Times listed on the agenda are approximate. At the discretion of the Chair, times and order of agenda items may change to maintain meeting flow. The Board will hear public testimony and engage in discussion before proceeding to the next item [except on marked items].

A single asterisk (*) preceding the item number marks a work session. Public testimony/comment will not be accepted (see over).

PUBLIC TESTIMONY: The Board of Forestry places great value on information received from the public. The Board accepts both oral and written comments on agenda items except Work Session items [see explanation below]. Those wishing to testify or present information to the Board are encouraged to:

- Provide written summaries of lengthy, detailed information;
- Recognize that substance, not length, determines the value of testimony or written information;
- Endorse rather than repeat the testimony of others;
- Sign-in at the information table located near the entrance.

Written comments provide a valuable reference and may be submitted before or during the meeting for consideration by the Board. Written comments received before the meeting will be copied and distributed to the Board. Otherwise, please bring 10 copies for distribution. Written comments will be attached to the minutes; oral comments will be summarized.

PUBLIC COMMENT: A Public Comment period is scheduled during each meeting for anyone wishing to address the Board on topics/issues not on that meeting's agenda. However, the Board cannot accept testimony if the topic to be addressed has had a public hearing and that comment period has closed.

If you wish to provide comments to the Board, you must **sign-in** on the sheet provided at the Information Table, located near the meeting room's entrance.

Three minutes will be allotted for each individual. Individuals wishing additional time for testimony, should contact the Board Support office [503-945-7210] at least two days in advance of the meeting. The maximum amount of time for all public comments under this agenda item will be **thirty minutes**.

WORK SESSIONS: Certain agenda topics may be marked with an asterisk indicating a "Work Session" item. Work Sessions provide the Board the opportunity to make its decisions after considering previous public comment and staff recommendations. However, the Board may choose to ask questions of the audience to clarify issues raised.

- During consideration of contested civil penalty cases, the Board will entertain oral argument only if Board members have questions relating to the information presented.

- Relating to the adoption of Oregon Administrative Rules: Under Oregon's Administrative Procedures Act, the Board can only consider those comments received by the established deadline as listed on the *Notice of Rulemaking* form. Additional input can only be accepted if the comment period is formally extended (ORS 183.335).

GENERAL INFORMATION: The Board's agenda is printed two-three weeks before the meeting date. During that time, circumstances may dictate a revision to the agenda, either in the sequence of items to be addressed, or in the time of day the item is to be presented. The Board will make every attempt to follow its published schedule, and requests your indulgence when that is not possible.

In order to provide the broadest range of services, lead-time is needed to make the necessary arrangements. If special materials, services, or assistance is required, such as a sign language interpreter, assistive listening device, or large print material, please contact our Public Affairs Office at least two working days in advance of the meeting via telephone 503-945-7424, FAX 503-945-7212, or text teletype (TDD) 1-800-437-4490 [Salem: 503-945-7213].

FINDINGS AND ECOMOMIC ANALYSIS OF FOREST PRACTICES

LANDSLIDES AND PUBLIC SAFETY RULES

The purpose of this agenda item is to present the findings and economic analysis conducted for the landslides and public safety rules, OAR 629-623-0000 through 0800, and to request that the Board adopt these findings and the economic analysis as required by ORS 527.714.

This agenda item relates to the *Forestry Program for Oregon* objective of stewardship through regulation of forest practices.

At its January 9, 2002 meeting, the Board determined that these are Type 1(c) rule changes that increase the standards for forest practices as described in ORS 527.714. The Board also approved starting the rulemaking process at that meeting. Senate Bill 12 directs the Board to adopt rules to replace the interim prohibition of operations authorized by Senate Bill 1211 (1997) and extended by Senate Bill 12 (1999). By law, these rules must consider the exposure of the public to these safety risks and shall include appropriate practices designed to reduce the occurrence, timing, or effects of rapidly moving landslides that are directly related to forest practices.

The analysis and findings required by ORS 527.714 are contained in Attachment 1. ORS 527.714 is shown in Attachment 2.

The Department recommends the Board take the following actions when it meets on April 19, 2002:

Adopt the report of findings and analysis of proposed OAR 629-625-0000 through 629-625-0800 (Attachment 1), and direct the Department to make the comprehensive analysis available to the public.

Attachments:

(1) Report of Findings Required Prior to Adoption of Proposed OAR 629-623-0000 through 0800

(2) ORS 527.714

REPORT OF FINDINGS REQUIRED PRIOR TO ADOPTION OF PROPOSED OAR 629-623-0000 through 0800

Prepared by the Forest Practices Program for
the Oregon Board of Forestry

March 20, 2002

DETERMINATION OF RULE TYPE

ORS 527.714 describes a process the Oregon Board of Forestry must follow when adopting new or revised forest practice rules. One requirement is that the Board identify proposed new rules or amended rules that implement the provisions of the Forest Practices Act that grant broad discretion to the Board of Forestry, and set standards for forest practices not specifically addressed in statute.

At its January 9, 2002 meeting, the Board of Forestry approved the Forest Practices Program staff's request to begin rulemaking on a package of new and amended forest practice rules. At that meeting, the Board also determined that the statutory requirements of ORS 527.714 for required findings and analysis apply to the landslides and public safety rules, OAR 629-623-0000 through 0800. The landslides and public safety rules are an interrelated package and so will be considered together for the purpose of this analysis.

If such rules establish new standards for forest practices or increase current standards of forest practices, the Board must determine specific facts and standards listed in ORS 527.714. The Board has found that OAR 629-623-0000 through 0800 are Type 1(c) rules that change the standards for forest practices as per Section (4) of ORS 527.714. They are subject to the analysis and finding requirements of ORS 527.714 (5) and (7). In addition, these rules must describe the purpose of the rule and the level of protection that is desired.

BACKGROUND

Oregon Senate Bill 1211 authorized an interim prohibition of certain operations in 1997 after rapidly moving landslides killed five people in Douglas County during a November 1996 storm. Studies have shown that removal of forest canopy and construction of roads can increase the occurrence of these rapidly moving landslides. Another law, Senate Bill 12, which passed in 1999, required the Board of Forestry to adopt permanent forest practice rules to reduce the public safety risk from rapidly moving landslides directly related to forest operations.

Senate Bill 12 states that "rapidly moving landslides present the greatest risk to human life, and persons living in, or traveling through, areas prone to rapidly moving landslides are at increased risk of serious bodily injury or death." The Board of Forestry (Board) is required to adopt rules to replace the interim prohibition of operations authorized by Senate Bill 1211 (1997) and extended by Senate Bill 12 (1999). By law, these rules must consider the exposure of the public to these safety risks and shall include appropriate practices designed to reduce the occurrence, timing, or effects of rapidly moving landslides.

The Board adopted six guiding principles for this project in April 2000, recognizing that protection of the public from rapidly moving landslides is a shared responsibility, and that forest practices regulations should be risk based. A diverse, fifteen-person project team was assembled to consider this issue, review scientific information, and assist the Department in making recommendations to the Board. Project Team members and additional technical experts have reviewed the issue paper. The report has been revised to reflect those reviews and comments.

A subcommittee of the regional forest practice committees worked with Forest Practices Program staff to draft these rules. The three regional forest practice committees and the project team have reviewed and recommended these rules. This analysis is conducted on the draft rules presented to the Board on January 9, 2002 (see Appendix 2 for the complete set of draft rules).

JUSTIFICATION FOR NEW STANDARDS FOR FOREST PRACTICES OR INCREASED STANDARDS OF FOREST PRACTICES

FINDINGS

The following information is provided to meet the requirements of ORS 527.714 (5).

ORS 527.714 (5)(a). If forest practices continue to be conducted under existing regulations, there is monitoring or research evidence that documents that . . . there is a substantial risk of serious bodily injury or death;

Oregon Department of Forestry 1996 Storm Impacts and Landslides Study

Prior to 1996, the Forest Practices Act included no authority for public safety protection. Senate Bill 1211 included an interim prohibition of operations above certain homes and roads, in place until rules are developed. The Legislature determined forest practices regulation for public safety is necessary. After the February 1996 storm event, the Department began its storm impacts and landslides of 1996 study. The *Oregon Department of Forestry 1996 Storm Impacts Monitoring Project* is relied upon for this analysis because it:

1. Is the largest ground-based study conducted on forest lands in the Pacific Northwest;
2. Reflects current forest management practices on different landownerships in Oregon;
3. Is the only study to collect detailed information on stands of intermediate age (20 to 100 years); and
4. Is the only forest landslide inventory to quantitatively compare aerial photo inventories with ground-based inventories.

Findings from this study include:

- Timber harvesting can affect landslide occurrence in areas with a high inherent landslide risk. Higher landslide densities and erosion volumes were found in stands that had been harvested in the previous nine years, as compared to forests older than 100 years, in three out of four Oregon

Department of Forestry (ODF) storm monitoring study areas. Forested areas between the ages of 30 and 100 years typically had lower landslide densities and erosion volumes than found in the mature forest stands.

- The factors currently used [in 1996] in the determination of high risk sites could be modified to improve accuracy in identifying those sites prone to debris slides and flows, and may need to include differences by geologic unit.

- Stream channel impacts varied greatly by study area. Impacts were not directly related to the number of landslides. Large, upslope landslides that enter stream tributaries with small horizontal stream junction angles and steep channel gradient slopes resulted in the greatest stream channel impacts.

- The Benda-Cundy model provides a reliable tool for determining maximum potential travel distances of "typical" debris flows and torrents from forested slopes. Less than 10 percent of the total landslides traveled further than predicted by the Benda-Cundy model. This means channel junction angles and channel gradient are important factors in determining maximum landslide run-out distance.

- The debris torrents that traveled further than predicted were, on average, larger and had younger riparian vegetation near their terminus, indicating that landslide volume and composition of the riparian area along debris torrent-prone channels may be important secondary factors in determining landslide run-out distances.

Legislative Findings

Based in part on the information from the ODF Storm Impacts and Landslides of 1996 Study, and as part of Senate Bill 12, the 1999 Legislative Assembly found that:

(1) Many locations in Oregon are subject to naturally occurring landslide hazards, and some human activities may accelerate the incidence or increase the adverse effects of those hazards.
(2) Rapidly moving landslides present the greatest risk to human life, and persons living in or traveling through areas prone to rapidly moving landslides are at increased risk of serious bodily injury or death.
(3) Although some risk from rapidly moving landslides can be mitigated through proper siting and construction techniques, sites that are vulnerable to impact from rapidly moving landslides are generally unsuitable for permanent habitation.
(4) Activities that require sound decisions to mitigate rapidly moving landslide hazards and risks include, but are not limited to:
    (a) Siting or constructing homes or other structures in areas prone to rapidly moving landslides;
    (b) Occupying existing homes or other structures in areas prone to rapidly moving landslides during periods of high risk due to heavy or extended rainfall;
    (c) Conducting land management activities that may adversely alter the susceptibility of land to rapidly moving landslides; and

(d) Operating motor vehicles in areas known to be subject to rapidly moving landslides.

Specifically, Section 4(4) (b) of Senate Bill 12 states "The State Forestry Department shall regulate forest operations to reduce the risk of serious bodily injury or death from rapidly moving landslides directly related to forest operations, and assist local governments in the siting review of permanent dwellings on and adjacent to forestlands in further review areas pursuant to subsection (1)(b) of this section."

Determination of Substantial Risk

As described in the landslides and public safety issue paper, it was necessary to assess the risk of debris flow fatalities in Oregon. The number of people killed by debris flows historically in Oregon was determined and a fatality rate was calculated. According to historical records, there have been at least 25 fatalities attributed to debris flows in Oregon since 1890. However, prior to 1950 the historical records appear to be incomplete and it is suspected that a number of debris flow fatalities were misreported or went unreported. Thus, analysis has focused on recorded events that occurred from 1950 to the present. At least 21 deaths in Oregon have been attributed to debris flows since 1950. The debris flow fatality rate averages about one fatality every five years for the entire population of Oregon. The risk of being killed by a debris flow in Oregon for the average citizen appears to be relatively low, about 0.02 fatalities per 100,000 people per year. However, the risk appears to be significant and several orders of magnitude greater, up to 70 fatalities per 100,000 people per year, for small segments of the population known to be living, working, or traveling in identified areas of high or extreme debris flow hazard. The risk to any individual depends on their level of exposure, which is determined by their location in relation to the paths of potential debris flows and by how much time they spend in these locations. Field investigation of 18 different debris flows with varying degrees of impacts to roads and structures identified the following factors associated with the most severe debris flow impacts: 1) locations within 110 feet of the channel at the loss of confinement and within 12° of the channel alignment; 2) steeper gradients in the last 300 feet of channel above structures or roads; and 3) debris flows initiated by failures of large road fills.

The Oregon Board of Forestry used this information to make its determination of substantial risk. At its July 20, 2001, meeting the Board directed the Department to use the Australian standard (as used for dams) of one death per 100,000 people to determine the level of "substantial risk" of fatality from rapidly moving landslides.

ORS 527.714 (5) (b). If the resource to be protected is a wildlife species, the scientific or biological status of a species or resource site to be protected by the proposed rule has been documented using best available information;

The proposed rule is not intended to protect an individual wildlife species, rather to exclusively reduce the human public safety risk associated with rapidly moving landslides.

ORS 527.714 (5) (c). The proposed rule reflects available scientific information, the results of relevant monitoring and, as appropriate, adequate field evaluation at representative locations in Oregon;

The rules are based on results from the storm impacts study, a debris flow impacts study, expert reviewed information found in the landslides and public safety issue paper, and from case study information in part provided by forest landowners.

The Storm Impacts and Landslides of 1996 Study included eight study areas in western Oregon and is the largest ground-based study of landslides ever conducted. The Landslides and Public Safety Issue Paper includes a comprehensive analysis of the factors that affect public safety risk from rapidly moving landslides. Both the Storm Impacts and Landslides of 1996 Study and the Landslides and Public Safety Issue Paper were reviewed by technical experts and edited accordingly to reflect best available science.

A total of 100 one-square mile areas was selected for an analysis of the proposed rules, as described in the analysis for ORS 527.714 (7)(d) later in this report. This area analysis evaluated randomly selected sections throughout western Oregon. Maps of these areas, including high landslide hazard locations and affected homes and roads, are available for viewing at the Oregon Department of Forestry office in Salem (Building 9). Specific case studies are also found in the analysis for ORS 527.714 (7)(d).

ORS 527.714 (5) (d). The objectives of the proposed rule are clearly defined, and the restrictions placed on forest practices as a result of adoption of the proposed rule . . . are to reduce risk of serious bodily injury or death; . . . and are directly related to the objective of the proposed rule and substantially advance its purpose . . .

Objectives Clearly Defined

The objectives of OAR 629-623-0000 through 0800 are listed OAR 629-623-0000 (3) as follows. This language is taken directly from Senate Bill 12 and the guiding principles adopted by the Board of Forestry.

629-623-0000
Purpose

(1) Shallow, rapidly moving landslides pose the principal public safety landslide risk that can be affected by forest operations. Since there is a high natural landslide hazard in certain locations, forest practices regulations cannot by themselves prevent all or even a majority of landslides in locations prone to shallow, rapidly moving landslides. Effective protection of the public can only be achieved through the shared responsibilities of homeowners, road users, forestland owners, and state and local governments.

(2) OAR 629-623-0000 through 629-623-0800 shall be known as the landslide and public safety rules.

(3) The purpose of the landslide and public safety rules is to reduce the risk of serious bodily injury or death caused by shallow, rapidly moving landslides that are directly related to forest practices. These rules consider the exposure of the public to these safety risks and include

appropriate practices designed to reduce the occurrence, timing, or effects of shallow, rapidly moving landslides.

Restrictions to Reduce Risk of Serious Bodily Injury or Death

The regulatory recommendations were developed by the project team and specifically limited to reduce risk of serious bodily injury or death. The three Forest Practice Regional Committees, and a special sub-committee dealing directly with this issue, reviewed these rules to ensure that they focus directly on reducing the risk of serious bodily injury or death.

Restrictions Directly Related To Objectives and Substantially Advance Purpose

These restrictions are limited to road construction and timber harvesting on high landslide hazard locations where there is a likelihood of persons being in the path of a rapidly moving landslide initiated in the operation area. These rules only apply where science and monitoring indicate forest practices will have a likely effect on rapidly moving landslides and public safety. The rules only apply to timber harvesting and road construction on certain very steep slopes (high landslide hazard locations) and to debris torrent prone stream channels.

ORS 527.714 (5) (e). The availability, effectiveness and feasibility of alternatives to the proposed rule, including nonregulatory alternatives, were considered, and the alternative chosen is the least burdensome to landowners and timber owners, in the aggregate, while still achieving the desired level of protection;

Consideration of Other Alternatives, Including Nonregulatory

The Project Team considered almost 40 different alternatives. Many of these alternatives are nonregulatory or are directed at other land uses (see discussion under ORS 527.714(5)(f) of this analysis). Nonregulatory alternatives recommended by the Project Team and allowed under this rule proposal include mitigation (actions to control or redirect rapidly moving landslides) that use structural measures that are designed by a licensed professional. This recommendation is included as part of 0AR 629-623-0800. The Project Team also recommended that rules be drafted to specifically allow landowners to remove trees on locations where the public safety risk from trees blowing over on specific sites is higher than the risk from rapidly moving landslides initiating on those same sites, now also part of 0AR 629-623-0800. A rule that allows homeowner management of rapidly moving landslide risk is also part of the rule package (OAR 629-623-0800 (4))

In addition, the project team issue paper helps make landowners aware of and encourages them to enter into voluntary agreements between forest landowners and homeowners to remove or relocate structures in locations prone to rapidly moving landslides.

Least Burden to Landowners

The interim prohibition of operations allowed no flexibility for different levels of risk or for mitigation actions. The proposed rules do consider risk and that some locations and circumstances have low risk. These rules recognize that persons in homes are at higher risk than persons driving on highways. The term high risk site has been replaced with "high landslide hazard locations" since risk depends on conditions along the debris flow/torrent path. These locations are determined based on slope steepness. Depending on the location and shape of the ground, slopes steeper than 65 to 80 percent are subject to these landslides. The rules recognize the area at highest hazard of these landslides is in the south central coast range from Coos County to western Lane County.

The proposed rules will allow forest management except in the highest public safety risk locations. The rules will allow mitigation to reduce risk and increase management options, and also propose to allow homeowner management of risk, since reduction of exposure is another means of reducing risk to persons.

As per the requirements of Senate Bill 12, new homes in locations prone to rapidly moving landslides will not trigger application of these rules. Forest landowners will therefore not be subject to increased burden solely related to the informed choice of a person who chooses to construct a dwelling in a dangerous location.

ORS 527.714 (5)(f). The benefits . . . in reduction of risk of serious bodily injury or death, that would be achieved by adopting the rule are in proportion to the degree that existing practices of the landowners and timber owners, in the aggregate, are contributing to the overall resource concern that the proposed rule is intended to address.

These proposed rules lower but do not eliminate the risk of a landslide initiating within a forest operation resulting in serious injury or death. To the best current information will allow, these restrictions will keep public safety risk after forest operations below to the level of substantial risk as established by the Board (one death per 100,000 people per year, for the persons at highest risk). These rules cannot lower the inherent, natural geologic risk to people in debris flow path locations during heavy rainfall periods. Keeping people out of these locations is the most effective means to lower public safety risk. To that end, the project team made a number of recommendations to reduce the number of people in these dangerous locations. Efforts to implement most of these recommendations are in various stages of development.

The Project Team recommended that the Department work with other appropriate agencies and technical experts to develop information for persons living in locations prone to rapidly moving landslides (Alternative II.1). The Department worked with Department of Geology and Mineral Industries to develop and distribute a brochure on landslide hazards, and plans to update this when the further review area maps are complete. The team also recommended that the Department work with local governments to provide this information to these residents (Alternative II.2). The team strongly recommended that the Governor's Interagency Hazard Mitigation Team, with the assistance of Oregon State University, lead an effort to obtain additional radar site and real-time rain gages so that the current debris flow warning system is significantly improved (Alternative II.3). This alternative will also improve flood forecasting and warnings in the Coast Range.

The Project Team also recommended that the Board develop a joint policy with the Land Conservation and Development Commission stating that development of new homes in locations prone to rapidly moving landslides is not compatible with forestry uses (Alternative IV.4).

The Project Team recommended that the Department of Transportation work with the Department of Forestry, Department of Geology and Mineral Industries, and the Office of Emergency Management to develop road management procedures for highways prone to rapidly moving landslides (Alternative IV.3). These procedures should better inform motorists of rapidly moving landslides and greatly reduce the likelihood of vehicles being stopped in locations prone to rapidly moving landslide impacts on the most critical highways. The Department should report back to the Board on the results of this collaborative effort. The Office of Emergency Management should effectively encourage local governments to acquire properties damaged or destroyed by rapidly moving landslides (Alternative IV.2).

The Project Team strongly recommended that the Board of Forestry work with local governments and the legislature to change the provisions of Senate Bill 12 that currently do not allow local governments to prohibit new home construction in dangerous locations prone to rapidly moving landslides (Alternative IV.9).

ECONOMIC ANALYSIS

The following information is provided to meet the requirements of ORS 527.714(7). Prior to the close of the public comment period, the Board must prepare and make available to the public a comprehensive analysis of the economic impact of the proposed rule.

Methods:

A sample of 100 Public Land Survey (PLS) sections of western Oregon forestland was analyzed in order to estimate the impacts of the proposed landslide and public safety rules. Sections were randomly selected for analysis from the 31,239 PLS sections in western Oregon. PLS sections generally cover about one square mile in area. In order to be included in the analysis, a section had to contain some state-regulated forestland. For example, sections under Federal ownership or sections consisting entirely of agricultural land were not included in the analysis. Only the state-regulated forestland within each section was included for analysis and in some cases, only portions of a section were analyzed for this reason. The amount of forestland in each section affected by the proposed landslides and public safety rules was assessed using a Geographic Information System. High landslide hazard locations within each section were identified using slope maps. Structures (assumed to be homes) and high traffic volume roads (volume was estimated) located within or outside of the section, but downslope of high landslide hazard locations within the section, were identified. The slopes and channels between the high landslide hazard locations and the homes or roads were evaluated for their likelihood to transport a debris flow. The total area of high landslide hazard location identified with high or intermediate risk to public safety was tallied for each section. The amount of additional protection that could be required in channel reaches where trees might help decrease the runout distance of debris flows was also calculated for the few sections where it applied.

A total of 54,010 acres of forestland were analyzed, of which 4,931 acres, approximately 9.1% of the analyzed area, were considered high landslide hazard location. Twenty homes were identified to be at high risk. Fifty-nine homes and nine roads were identified to be at intermediate risk. Eighteen channel reaches, totaling less than 5,000 feet of channel, were identified for additional protection. Out of the 4,931 acres of high landslide hazard location, less than 191 acres were considered intermediate risk and only 51 acres were considered high risk. Of all the forestland analyzed, only 0.35% was considered intermediate risk and only 0.09% was considered high risk. Less than 11 acres, 0.02% of the forestland analyzed, were affected by additional channel protection. Less than 0.5% of the forestland analyzed was affected by the proposed landslide and public safety rules.

The Tyee Core Area, a recognized area of inherently high landslide hazard due to its geology, is located in portions of Lane, Douglas, and Coos Counties. The Tyee Core Area was affected significantly more than the rest of Western Oregon. Out of the area analyzed within the Tyee Core Area, 17.4% was considered high landslide hazard location, with 0.2% having high public safety risk. Apart from the analyzed sections, several estimates of the worst case scenario were also made.

For high downslope public safety risk, the analysis doubled the acreage (calculated as high landslide hazard location) to account for windfirm buffers for intermediate public safety risk. For intermediate public safety risk, the analysis considered half of high landslide hazard location unharvested.

ORS 527.714(7) Requirements

If the board determines that a proposed rule is of the type described in subsection (1)(c) of this section, and the proposed rule would require new or increased standards for forest practices, as part of or in addition to the economic and fiscal impact statement required by ORS 183.335 (2)(b)(E), the board shall, prior to the close of the public comment period, prepare and make available to the public a comprehensive analysis of the economic impact of the proposed rule. The analysis shall include, but is not limited to:

ORS 527.714(a) An estimate of the potential change in timber harvest as a result of the rule;

Reduced Volume in Million Board Feet Per Year

	Industrial	Nonindustrial	State & Other Public	Totals
Non-Tyee	2.96	1.18	0.63	4.77
Tyee	2.43	1.65	0.51	4.58
Totals	5.39	2.83	1.13	9.35

Reduced Stumpage Value in Millions of Dollars Per Year

	Industrial	Nonindustrial	State & Other Public	Totals
Non-Tyee	1.20	0.48	0.25	1.93
Tyee	0.98	0.67	0.20	1.85
Totals	2.18	1.14	0.46	3.78

ORS 527.714 (7)(b) An estimate of the overall statewide economic impact, including a change in output, employment and income;

Reduction in Millions of Dollars Except for Employment Per Year	
Output	18.97
Employee Compensation	5.01
Proprietors Income	0.48
Other Property Type Income	2.57
Employment (Jobs)	149

ORS 527.714 (7)(c) An estimate of the total economic impact on the forest products industry and common school and county forest trust land revenues, both regionally and statewide;

	Millions of Dollars Per Year
Reduction in Output from Forest Products Industry	13.16
Reduction in Common School and County Forest Trust Land Revenues	0.46

ORS 527.714 (7)(d) Information derived from consultation with potentially affected landowners and timber owners and an assessment of the economic impact of the proposed rule under a wide variety of circumstances, including varying ownership sizes and the geographic location and terrain of a diverse subset of potentially affected forestland parcels.

The following examples represent on-the-ground assessments of the interim prohibition of operations (law these rules will replace). The first two examples represent the costs prior to the proposed rules. Note that under the proposal, these would be intermediate risk scenarios, so about half the volume left could be harvested, reducing the effects in these cases by 50%.

1) DAVIDSON INDUSTRIES, BEERS TRACT, MAPLETON

Davidson Industries is a small, fourth generation, family-owned company based in Mapleton with about 20,000 acres of forest ownership and a mill. Their harvest scheme plans for a 70-year conifer rotation. With about 10% of the land now in riparian and other set-asides, more set-asides like landslide rules are affecting their ability to maintain rotation age and continues to erode their ability to stay in business for another 50 years.

The Beers Tract has a 58-acre logging unit of which 25 acres was denied permission to harvest under the interim landslide rules. The 25 acres is a contiguous area of steep ground on a west slope facing a stream. Fifteen hundred feet downstream from the nearest edge of the denied unit is a house on an old debris fan.

On the 25-acre denied area is 524 MBF of mostly 100-year-old Douglas-fir, as well as 40 MBF of saw-log alder.

The standing value of this timber is conservatively $220,000. Standing value is the log price at a mill minus logging costs and harvest taxes, or what a buyer would pay for the timber as it stands.

The house and its property have a value of about $200,000. Cost to move the house off the debris fan is at least $50,000.

Under the new rules, this landowner would be able to harvest at least half of this value.

2) WILLIAM A. MCKINNIE TRACT, ELKTON

William McKinnie owns approximately 35 acres of timberland about 6 miles west of Elkton. The property is a steep, long, narrow piece that borders Highway 38 for close to one-half mile.

Of the 35 acres, about 15 acres have merchantable timber. The stand is primarily moderately stocked Douglas-fir, with about two-thirds of the volume in 40-year-old timber and the remaining in older residual timber. There is a cruised volume of 230 MBF.

The estimated value of the standing timber today is $80,000. In 1997, when Mr. McKinnie submitted a notification of operations and was unable to harvest under the Senate Bill 1211 interim prohibition, the estimated value of the standing timber was $115,000.

The terrain on 28 acres is very steep down to the highway with some rocky bluffs. Seven acres on top is flatter and is in a younger Douglas-fir plantation.

Mr. McKinnie can be characterized as a small woodland owner. He owns two other tracts for a total forest ownership, including this Elkton tract, of 261 acres. The timber on the other tracts is in non-merchantable younger plantations. He says, "virtually all the merchantable timber I own is on the Elkton property, I have a heck of a lot of my assets tied up in that timber."

"I would be happy to sell or trade this property to the State."

Under the new rules, this landowner would be able to harvest about half of this value.

3) CANNERY RIDGE - NORTH COAST RANGE OPERATION

This proposed operation was reviewed on-site with foresters and engineers who worked for the landowner and the forest practices forester for the area. The operation is located in the Coast Range, north of the Tyee Core Area. Prior to the field review, a structure (home?) was located on the USGS map. Upon visiting the site, the home was in a different location than shown on the map, and actually closer to another landowner's (non-industrial) property. The home appears to be just above a location where it could be impacted from a debris flow that might begin on the industrial ownership. Therefore, a more detailed geotechnical investigation will be conducted. At this time, the 64-acre operation proposed by the industrial landowner does not appear to be affected. However, the six-acre debris flow shed on the non-industrial landowner would result in that acreage remaining unharvested.

Estimated timber value left [to other landowner] (assuming 25 MBF/acre and 6 acres) **$32,000**

Enlarged drawing of debris flow shed just outside of proposed 64 acre operation outside of Tyee core area.

Administration of the Interim Prohibition of Operations

Between July 1997 and April 2001, the Department has been notified of 88 operations meeting interim prohibition characteristics on all or a portion of these operations. The interim prohibition has completely precluded harvesting two of these operations. Eighty-one operations have been subject to leaving a portion of the proposed operations unharvested. Total land area excluded from harvest was 786 acres. Five operations have been granted deferral exceptions because the danger of windthrow to a nearby residence was greater than the landslide risk at those sites. The Department of Forestry has advised landowners to obtain the services of geotechnical professionals (engineering geologists or geotechnical engineers) for operations where a portion of the proposed logging unit was subject to the interim prohibition of operations.

Note that most landowners have screened their lands using the Department's guidance and are not presently proposing forest operations in these areas. Therefore, the actual number of operations affected by the interim prohibition is significantly greater than 88. As required by Senate Bill 12, administration of the interim prohibition of operations on certain high risk sites will continue until rules are adopted and promulgated by the Board of Forestry.

Examples of Highest Effects Scenarios

The analysis of randomly selected sections (described earlier in the Economic Analysis Methods section) provided insight at a regional level into the impacts of the proposed landslide and public safety rules. However, at a specific location impacts could be much greater. An estimate of the worst case scenario was made by searching western Oregon for the home with the greatest area of affected forestland above it. Five highest effects scenarios were identified with a range of effects, three of these were located in Douglas County within the Tyee Core Area. Most of these areas have been reviewed on the ground to a limited extent.

Scenario 1 involves a home located on a debris fan at the mouth of a small canyon. The home was destroyed by a debris flow in 1996 and was rebuilt in the same location. The basin above the home has an area of 91 acres. Approximately 60 acres of forestland, 66% of the watershed above the home, would be affected with high public safety risk protection. Ownership in this case is mostly state forests.

Estimated timber value left (assuming 1/4 acreage sufficiently large to harvest and 25 MBF/acre)
$240,000

Home in Scenario 1 and associated debris flow shed.
High landslide hazard locations are shaded.

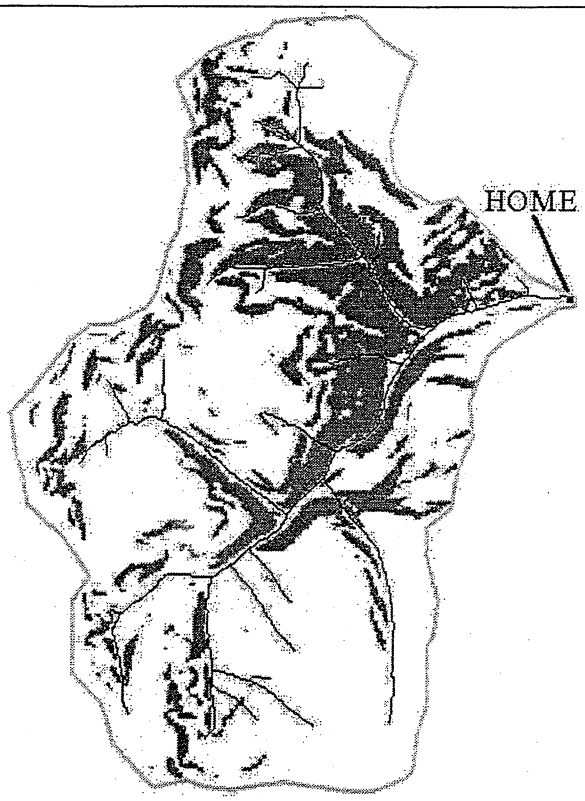
Scenario 2 involves a home located on old debris flow deposits within a small canyon. The home was narrowly missed by two debris flows in 1996. The basin above the home has an area of 325 acres. Approximately 114 acres of forestland, 35% of the watershed above the home, would be affected with high public safety risk protection. Another acre would be affected by additional channel protection measures. Ownership is a mixture of industrial, non-industrial, and Bureau of Land Management (BLM) forestlands.

Estimated timber value left (assuming 1/4 acreage sufficiently large to harvest and 25 MBF/acre)
$455,000

Home in Scenario 2 and associated debris flow shed.
High landslide hazard locations are shaded.

Scenario 3 involves a home located on a debris fan at the mouth of a canyon. The basin above the home has an area of 1,528 acres. Approximately 383 acres of forestland, 25% of the watershed above the home, would be subject to intermediate public safety risk regulations. Another acre would be affected by additional channel protection measures. At the present time, the home is located off the debris fan, thus the intermediate public safety protection. If the home were in a slightly different location, the impacts would be much greater. Ownership in this case is mixed industrial and BLM.

Estimated timber value left (assuming 1/4 acreage sufficiently large to harvest and 25 MBF/acre)
$510,000

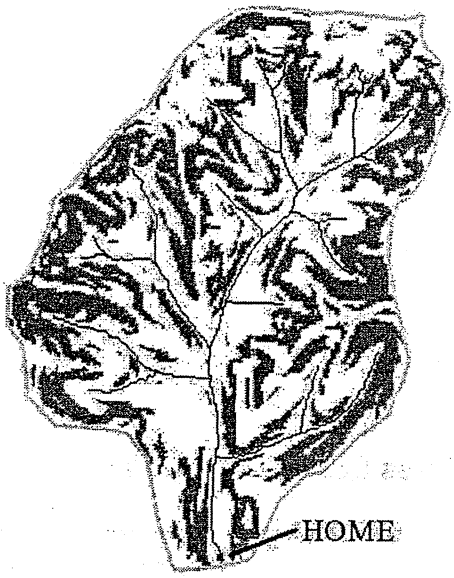


Home in Scenario 3 and associated debris flow shed.
High landslide hazard locations are shaded.

The three aforementioned scenarios illustrate how severe impacts at the most affected locations can be. The home in Scenario 1 is affected by the greatest percentage of slopes in the basin above it and the home in Scenario 3 is affected by the most acres of forestland. These scenarios are located in some of the most hazardous areas in the state. Scenarios more severe than the magnitude of these are unlikely to exist.

Scenario 4 was identified for evaluation in the Chappel Creek watershed. A home is located at the base of a small draw on a debris fan directly adjacent to Chappel Creek. The basin above the home has an area of 954 acres. The home has previously been assessed in the field for risk from landslides initiating within the small draw just west of the home. Due to the high landslide hazard locations in the small draw and to the proximity of the home to the base of the draw and to the evidence of past landslides, the home was found to be at risk from landslides initiated within the small draw. About 2 acres of forestland is affected. However, based on field observations and map measurements, the home appears to be at a low risk from landslides initiating within the rest of the Chappel Creek watershed. Ownership is mostly industrial forestland.

Estimated timber value left (assuming 25 MBF/acre on 2 acres) **$11,000**



Chappel Creek debris flow shed and home.
High landslide hazard locations are shaded.

Scenario 5 is in one of the randomly selected sections that were evaluated as part of the economic analysis. It involves a home located at the mouth of a small canyon in Clatsop County (outside of the Tyee Core Area. The area of forestland that affects the home was one of the largest evaluated. The basin above the home has an area of 284 acres. Approximately 34 acres of forestland, 12% of the watershed above the home, would be affected with intermediate or high risk protection. Ownership is mostly state forests.

Estimated timber value left (assuming 1/4 acreage sufficiently large to harvest and 25 MBF/acre)
$90,000

Home in Scenario 5 and associated debris flow shed.
High landslide hazard locations are shaded.

References

Oregon Department of Forestry. 2001. Forestry, *Landslides and Public Safety: An issue paper prepared for the Oregon Board of Forestry. By the Landslides and Public Safety Project Team.* Keith Mills and Jason Hinkle, eds. Salem, Oregon. June 2001. 130 pp.

Robison, E. G., K. Mills, J. T. Paul, L. Dent, and A. Skaugset. 1999. *Oregon Department of Forestry 1996 Storm Impacts Monitoring Project: Final Report. Forest Practices Technical Report #4.* Oregon Department of Forestry, Salem, Oregon. 141 pp.

Appendix 1

MEMORANDUM

Date: 3/21/02

To: Keith Mills

Cc: David Morman

From: Gary Lettman

RE: **DRAFT** Landslide Rules Economic Analysis

Per your request, following is most of the economic analysis information required by ORS 527.714.

The analysis is required by ownership size, geographic area, and terrain. The requirement for including ownership size into the analysis was done by separating private ownership into two owner classes, private industrial and private nonindustrial. Since economic impacts in eastern Oregon would be negligible, the analysis was done for western Oregon only. Changes in timber harvest were also delineated by Tyee and non Tyee areas. Since the rule applies almost exclusively to steeper slopes, all economic impacts are assumed to occur in from management changes on steep terrain, slopes greater than 65%.

You have agreed to provide the information required by section (7) (d), pertaining to information derived from consultation with potentially affected landowners. You will also need to provide the information required by 183.335 about costs to government agencies and business, including small businesses of complying with the proposed rule.

Economic impacts could be less left if landowners use leave trees to meet the requirements of the proposed rules. Economic impacts will be increased by an unknown amount by increased logging costs in the vicinity of the affected areas.

1. Estimate of potential change in Oregon timber harvest as a result of the rule, by owner and area

Volume in Million Board Feet

	Industrial	Nonindustrial	State & Other Public	Totals
Non-Tyee	2.96	1.18	0.63	4.77
Tyee	2.43	1.65	0.51	4.58
Totals	5.39	2.83	1.13	9.35

Stumpage Value in Millions of Dollars

	Industrial	Nonindustrial	State & Other Public	Totals
Non-Tyee	1.20	0.48	0.25	1.93
Tyee	0.98	0.67	0.20	1.85
Totals	2.18	1.14	0.46	3.78

2. Estimate of overall statewide economic impact

Millions of Dollars Except for Employment

Output	18.97
Employee Compensation	5.01
Proprietors Income	0.48
Other Property Type Income	2.57
Employment (Jobs)	149

3. Estimate of total economic impact on the forest products industry and state forest revenues

Millions of Dollars

Change in Output from Forest Products Industry	13.16
Change in common school and county forest trust land revenues	0.46

GL

Landslide Economic Analysis.doc/Jaz C

Appendix 2

PROPOSED RULES OAR 629-623-000 through 0800
DIVISION 623
LANDSLIDES AND PUBLIC SAFETY RULES

629-623-0000
Purpose

(1) Shallow, rapidly moving landslides pose the principal public safety landslide risk that can be affected by forest operations. Since there is a high natural landslide hazard in certain locations, forest practices regulations cannot by themselves prevent all or even a majority of landslides in locations prone to shallow, rapidly moving landslides. Effective protection of the public can only be achieved through the shared responsibilities of homeowners, road users, forestland owners, and state and local governments.

(2) OAR 629-623-0000 through 629-623-0800 shall be known as the landslide and public safety rules.

(3) The purpose of the landslide and public safety rules is to reduce the risk of serious bodily injury or death caused by shallow, rapidly moving landslides that are directly related to forest practices. These rules consider the exposure of the public to these safety risks and include appropriate practices designed to reduce the occurrence, timing, or effects of shallow, rapidly moving landslides.

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

629-623-0100
Screening for High Landslide Hazard Locations and Exposed Population

(1) The State Forester will use further review area maps and other information to screen operations that may contain high landslide hazard locations that may also affect exposed populations.

(2) Upon notification by the State Forester, operators shall identify portions of the operation that contain high landslide hazard locations and shall also identify structures and paved public roads within mapped further review areas below the operation area.

(3) The following criteria shall be used to identify high landslide hazard locations:

(a) The presence, as measured on site, of any slope in western Oregon (excluding competent rock outcrops) steeper than 80 percent, except in the Tyee Core Area, where it is any slope steeper than 75 percent; or

(b) The presence, as measured on site, of headwalls or draws in western Oregon steeper than 70 percent, except in the Tyee Core Area, where the headwall or draw slope is steeper than 65 percent.

(c) Notwithstanding the slopes specified in (a) or (b) above, field identification of atypical subsurface conditions by a geotechnical specialist may be used to modify the high landslide hazard location slope steepness thresholds for any specific location in any part of the state so that the hazard is equivalent to (a) or (b) above. The final determination of equivalent hazard shall be made by the State Forester.

(4) The State Forester will review the information provided by operators to identify structures and paved public roads by independently verifying these locations.

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

629-623-0200
Exposure Categories

(1) Exposure categories are established to evaluate risk to persons from rapidly moving landslides.

(2) Exposure Category A includes habitable residences, schools, or other buildings that are typically occupied 25% or more of the time during periods when wet season rain storms are common.

(3) Exposure Category B includes paved public roads averaging over 500 vehicles per day, as determined during periods when wet season rain storms are common, if possible.

(4) Exposure Category C includes barns, outbuildings, recreational dwellings not included in Exposure Category A, low-use public roads, and other constructed facilities where people are not usually present when wet season rain storms are common.

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

629-623-0250
Evaluation of Rapidly Moving Landslide Transport Potential

(1) The State Forester will publish technical guidance for evaluating rapidly moving landslide transport potential. Transport potential is a rating of the likelihood of a specific location being inundated by a rapidly moving landslide. The principal transport potential factors may include, but are not limited to: the location of the structure or road in relationship to the debris-torrent prone stream channel or steep slope; channel confinement; channel gradient; channel junction angles; and debris in the channel.

(2) The State Forester may request that the landowner submit a geotechnical specialist (certified engineering geologist or licensed civil [geotechnical] engineer) prepared determination of transport potential for the proposed operation. The State Forester will review the transport potential determination with respect to the technical guidance established by the State Forester to make the final determination of transport potential.

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

629-623-0300
General Forest Practices Restriction Levels for Locations Prone to Shallow, Rapidly Moving Landslides

(1) The purpose of this rule is to describe the system used to evaluate appropriate forest practices based on public safety risk associated with shallow, rapidly moving landslides.

(2) Applicable forest practices rules are determined using the exposure category as described in OAR 629-623-0200 and the transport potential as described in OAR 629-623-0250. Exposure categories and transport potential shall be used to determine public safety risk level, as shown in Table 1.

Table 1. Site Specific Determination of Public Safety Risk Levels.

Exposure Category	Transport Potential Rating	
	Likely	Possible
A – Frequently occupied structures	High Public Safety Risk	Intermediate Public Safety Risk
B – Paved public roads with over 500 v.p.d.	Intermediate Public Safety Risk	Low Public Safety Risk
C – Infrequently occupied structures	Low Public Safety Risk*	Low Public Safety Risk

***If transport potential is extreme, the State Forester may determine that intermediate risk regulations are appropriate.**

(3) Forest practice regulations for "high public safety risk" operations are described in OAR 629-623-0400, 629-623-0450, 629-623-0600, and 629-623-0700.

(4) Forest practice regulations for "intermediate public safety risk" operations are described in OAR 629-623-0500, 629-623-0550, 629-623-0600, 629-623-0700, and 629-630-0500.

(5) Timber harvesting practices for "low public safety risk" shall normally be those practices described in OAR 629-630-0500. However, the State Forester may identify those situations where the transport potential is extreme or other extenuating circumstances that make intermediate public safety risk regulations appropriate. The State Forester will inform operators of this situation and the requirements to comply with OAR 629-623-0500, 629-623-0550, 629-623-0600, and 629-623-0700.

(6) As required by subsection 4 (3) of chapter 1103, Oregon Laws 1999, forest practice rules shall not apply to risk situations arising solely from the construction of a building permitted after local governments have received maps or other information showing that the building site is within a further review area.

(7) Leave trees required by ORS 527.676 may be used to comply with any timber harvesting rules for landslides and public safety, except those required to be retained in riparian management areas by OAR 629-640-0000 through 629-640-0500.

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

629-623-0400
Restriction Of Timber Harvesting - High Down Slope Public Safety Risk

(1) Operators shall not remove trees from high landslide hazard locations with high downslope public safety risk. Removal of dead or diseased trees or trees from sites that have already failed is allowed if the operator can demonstrate that the operation results in no increased downslope public safety risk.

(2) Operators shall leave a sufficient number and arrangement of trees around the high landslide hazard locations to reduce the likelihood of trees blowing over on these high landslide hazard locations.

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

629-623-0450
Restriction Of Road Construction - High Down Slope Public Safety Risk

(1) Operators shall not construct new roads in those high landslide hazard locations with high downslope public safety risk.

(2) Operators may reconstruct existing roads in such locations if the operator can demonstrate that road reconstruction reduces landslide hazard.

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

629-623-0500
Timber Harvesting In Locations With Intermediate Down Slope Public Safety Risk

(1) The purpose of this rule is to manage canopy closure on high landslide hazard locations with intermediate downslope public safety risk.

(2) Landowners may consider any or all of the following techniques for managing intermediate downslope public safety risk within their ownership:

(a) Limiting the area of high landslide hazard locations in a 0 to 9 year-old age class and also the area of older stands with reduced canopy closure;

(b) Using reforestation and stand management practices that result in rapid canopy closure; and

(c) Using thinning or partial cutting practices that allow rapid canopy recovery.

(3) For timber harvesting operations with intermediate downslope public safety risk, landowners shall describe in the written plan required by OAR 629-623-0700 how they will manage the high landslide hazard locations within their ownership and directly above the affected home or road.

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

629-623-0550
Road Construction In Locations With Intermediate Down Slope Public Safety Risk

(1) Operators shall ensure that roads constructed on high landslide hazard locations and with intermediate downslope public safety risk follow site-specific recommendations of a geotechnical specialist.

(2) In addition to the requirements of OAR 629-625-0100 through 629-625-0440, written plans shall describe the stability of the road cutslope and measures to prevent drainage waters from discharging onto high landslide hazard locations.

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

629-623-0600
Protection Of Debris Torrent-Prone Stream Channels

(1) The purpose of this rule is to reduce or eliminate woody debris loading in debris torrent-prone stream channels, where this woody debris may increase public safety risk, and to retain large standing trees in locations where they might slow debris torrent movement.

(2) Operators shall fall and yard trees to minimize slash and other debris accumulations in debris torrent-prone stream channels for Exposure Category A or B.

(3) Operators shall remove logging slash piles and continuous logging slash deposits from debris torrent-prone stream channels.

(4) Operators shall leave and protect standing trees along the likely depositional reaches of debris torrent-prone stream channels above structures or roads determined to meet Exposure Category A or B. Trees larger than 20 inches in diameter, as measured at breast height, and that are also within 50 feet of these channels, shall be left for a distance of 300 feet or the depositional length of the channel, whichever is less, as determined by the State Forester.

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

629-623-0700
Written Plans

(1) In order to allow evaluation of public safety risk and the appropriate methods for reducing this risk, operators shall submit a written plan for all operations with intermediate or high public safety risk as described in OAR 629-623-0300.

(2) At a minimum, these written plans shall include:

(a) A determination of public safety risk (OAR 629-623-0300);

(b) A map showing those portion(s) of the operation containing high landslide hazard locations;

(c) The location of all existing and proposed new roads crossing high landslide hazard locations;

(d) The location of habitable structures (Exposure Category A) and paved public roads (Exposure Category "B") below the operation and within further review areas;

(e) Locations where timber harvesting will not occur;

(f) Locations where partial cutting will occur and the specific silvicultural prescription; and

(g) Additional information as requested by the State Forester.

(3) Operators shall submit a written plan for stream crossing fills constructed across debris torrent-prone stream channels above habitable structures or paved public roads that are traveled by greater than 500 vehicles per day (Exposure Categories A and B).

(4) Operators shall submit a written plan for waste fill areas that are within a watershed containing debris torrent-prone stream channels and above habitable structures or paved public roads that are traveled by greater than 500 vehicles per day (Exposure Categories A and B).

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

629-623-0800
Hazard Mitigation and Risk Reduction Projects

(1) Effective, completed mitigation projects can be used to lower the debris torrent transport potential, as determined per OAR 629-623-0250.

(2) If mitigation is a practicable option, and the affected landowners agree to mitigation, structural measures that are designed and inspected by a geotechnical specialist are the preferred mitigation strategy.

(3) Within their ownership, landowners may remove trees on locations where the public safety risk from trees blowing over and directly hitting habitable structures or paved public roads on high landslide hazard locations specific sites is higher than from rapidly moving landslides initiating on those same high landslide hazard locations.

(4) A homeowner may submit to the State Forester evidence in the form of a risk management plan in order to lower the exposure category (OAR 629-623-0200) from Category A to Category B. Risk management plans shall include:

(a) An evacuation plan that reduces the risk to residents during periods when rapidly moving landslides may occur;

(b) A copy of the property title showing full disclosure of the elevated landslide hazard on that property title, in order to warn future buyers and renters of the increased landslide hazard and the necessity to comply with the evacuation plan;

(c) Assumption by the homeowner of all liability for injury and property damage that might be associated with rapidly moving landslides initiating within the operation; and

(d) The signatures of the homeowner and of a notary public.

Statutory Auth: ORS 527.710(11)
Other Authority: ORS 527.630(5) and ORS 527.714

ORS 527.714

527.714 Types of rules; procedure; findings necessary; rule analysis.

(1) The rulemaking authority of the State Board of Forestry under ORS 527.610 to 527.770 consists generally of the following three types of rules:

(a) Rules adopted to implement administration, procedures or enforcement of ORS 527.610 to 527.770 that support but do not directly regulate standards of forest practices.

(b) Rules adopted to provide definitions or procedures for forest practices where the standards are set in statute.

(c) Rules adopted to implement the provisions of ORS 527.710 (2), (3), (6), (8), (9), (10) and (11) that grant broad discretion to the board and that set standards for forest practices not specifically addressed in statute.

(2) When considering the adoption of a rule, and prior to the notice required pursuant to ORS 183.335, the board shall determine which type of rule described in subsection (1) of this section is being considered.

(3) If the board determines that a proposed rule is of the type described in subsection (1)(a) or (b) of this section, or if the proposed rule is designed only to clarify the meaning of rules already adopted or to make minor adjustments to rules already adopted that are of the type described in subsection (1)(c) of this section, rulemaking may proceed in accordance with ORS 183.325 to 183.410 and is not subject to the provisions of this section.

(4) If the board determines that a proposed rule is of the type described in subsection (1)(c) of this section, and the proposed rule would change the standards for forest practices, the board shall describe in its rule the purpose of the rule and the level of protection that is desired.

(5) If the board determines that a proposed rule is of the type described in subsection (1)(c) of this section, including a proposed amendment to an existing rule not qualifying under subsection (3) of this section, and the proposed rule would provide new or increased standards for forest practices, the board may adopt such a rule only after determining that the following facts exist and standards are met:

(a) If forest practices continue to be conducted under existing regulations, there is monitoring or research evidence that documents that degradation of resources maintained under ORS 527.710 (2) or (3) is likely, or in the case of rules proposed under ORS 527.710 (11), that there is a substantial risk of serious bodily injury or death;

(b) If the resource to be protected is a wildlife species, the scientific or biological status of a species or resource site to be protected by the proposed rule has been documented using best available information;

(c) The proposed rule reflects available scientific information, the results of relevant monitoring and, as appropriate, adequate field evaluation at representative locations in Oregon;

(d) The objectives of the proposed rule are clearly defined, and the restrictions placed on forest practices as a result of adoption of the proposed rule:

(A) Are to prevent harm or provide benefits to the resource or resource site for which protection is sought, or in the case of rules proposed under ORS 527.710 (11), to reduce risk of serious bodily injury or death; and

(B) Are directly related to the objective of the proposed rule and substantially advance its purpose;

(e) The availability, effectiveness and feasibility of alternatives to the proposed rule, including nonregulatory alternatives, were considered, and the alternative chosen is the least burdensome to landowners and timber owners, in the aggregate, while still achieving the desired level of protection; and

(f) The benefits to the resource, or in the case of rules proposed under ORS 527.710 (11), the benefits in reduction of risk of serious bodily injury or death, that would be achieved by adopting the rule are in proportion to the degree that existing practices of the landowners and timber owners, in the aggregate, are contributing to the overall resource concern that the proposed rule is intended to address.

(6) Nothing in subsection (5) of this section:

(a) Requires the board to call witnesses;

(b) Requires the board to allow cross-examination of witnesses;

(c) Restricts ex parte communications with the board or requires the board to place statements of such communications on the record;

(d) Requires verbatim transcripts of records of proceedings; or

(e) Requires depositions, discovery or subpoenas.

(7) If the board determines that a proposed rule is of the type described in subsection (1)(c) of this section, and the proposed rule would require new or increased standards for forest practices, as part of or in addition to the economic and fiscal impact statement required by ORS 183.335 (2)(b)(E), the board shall, prior to the close of the public comment period, prepare and make available to the public a comprehensive analysis of the economic impact of the proposed rule. The analysis shall include, but is not limited to:

(a) An estimate of the potential change in timber harvest as a result of the rule;

(b) An estimate of the overall statewide economic impact, including a change in output, employment and income;

(c) An estimate of the total economic impact on the forest products industry and common school and county forest trust land revenues, both regionally and statewide; and

(d) Information derived from consultation with potentially affected landowners and timber owners and an assessment of the economic impact of the proposed rule under a wide variety of circumstances, including varying ownership sizes and the geographic location and terrain of a diverse subset of potentially affected forestland parcels.

(8) The provisions of this section do not apply to temporary rules adopted by the board.

[1996 c.9 s.16 (enacted in lieu of 527.713); 1999 c.1103 s.13]

Staff Report Agenda Item 2 on Spring Branch Cr State Forester
Comments Hearing Request by George Kral: Attachment Number 6

Hearing Recording OAH Ref No. 2022-ABC-05271 April 15 Morning Session Part One link

https://www.oregon.gov/odf/board/bof/20220515_AUDIO_02_06_Hearing_am-part1.mp3

Staff Report Agenda Item 2 on Spring Branch Cr State Forester Comments Hearing Request by George Kral: Attachment Number 6

Hearing Recording OAH Ref No. 2022-ABC-05271 April 15 Morning Session Part Two link

https://www.oregon.gov/odf/board/bof/20220515_AUDIO_02_06_Hearing_am-part2.mp3

Staff Report Agenda Item 2 on Spring Branch Cr State Forester Comments Hearing Request by George Kral: Attachment Number 7

Hearing Recording OAH Ref No. 2022-ABC-05271 April 15 Afternoon Session Part One link

https://www.oregon.gov/odf/board/bof/20220515_AUDIO_02_07_Hearing_pm-part1.mp3

Staff Report Agenda Item 2 on Spring Branch Cr State Forester Comments Hearing Request by George Kral: Attachment Number 7

Hearing Recording OAH Ref No. 2022-ABC-05271 April 15 Afternoon Session Part Two link

https://www.oregon.gov/odf/board/bof/20220515_AUDIO_02_07_Hearing_pm-part2.mp3

Staff Report Agenda Item 2 on Spring Branch Cr State Forester Comments Hearing Request by George Kral: Attachment Number 8

Hearing Recording OAH Ref No. 2022-ABC-05271 April 21 Morning Session Part One link

https://www.oregon.gov/odf/board/bof/20220521_AUDIO_02_08_Hearing_am-part1.mp3

Staff Report Agenda Item 2 on Spring Branch Cr State Forester Comments Hearing Request by George Kral: Attachment Number 8

Hearing Recording OAH Ref No. 2022-ABC-05271 April 21 Morning Session Part Two link

https://www.oregon.gov/odf/board/bof/20220521_AUDIO_02_08_Hearing_am-part2.mp3

Staff Report Agenda Item 2 on Spring Branch Cr State Forester
Comments Hearing Request by George Kral: Attachment Number 9

Hearing Recording OAH Ref No. 2022-ABC-05271 April 21 Afternoon Session Part One link

https://www.oregon.gov/odf/board/bof/20220521_AUDIO_02_09_Hearing_pm-part1.mp3

Staff Report Agenda Item 2 on Spring Branch Cr State Forester Comments Hearing Request by George Kral: Attachment Number 9

Hearing Recording OAH Ref No. 2022-ABC-05271 April 21 Afternoon Session Part Two link

https://www.oregon.gov/odf/board/bof/20220521_AUDIO_02_09_Hearing_pm-part2.mp3

STAFF REPORT

Agenda Item No.:	3
Topic:	*Executive Session
Date of Presentation:	May 16, 2022
Contact Information:	Oregon Department of Justice and Oregon Department of Forestry

SUMMARY

The Board will meet in Executive Session for the purpose of conferring with legal counsel regarding the consideration of information or records that are exempt by law from public inspection (ORS 192.660 (2)(f).

Agenda Item No.:	4
Work Plan	Administrative
Topic:	Emergency Fire Funding Fix Legislative Concepts for 2023 Legislative Session
Presentation Title:	Board Approval of 2023 Agency Legislative Concepts
Date of Presentation:	May 16, 2022
Contact Information:	Bill Herber, Deputy Director for Administration 503-945-7203; bill.herber@odf.oregon.gov Adam Meyer, Legislative Concept Project Lead 503-383-5847; adam.k.meyer@odf.oregon.gov

SUMMARY

This agenda item seeks Board of Forestry (Board) approval of two 2023 legislative concepts from the Oregon Department of Forestry regarding an emergency fire funding fix.

CONTEXT

Legislative concept development, a part of the strategic planning cycle for both the Board and department, begins in the fall of odd-numbered years and continues through the spring of even numbered years. If advanced, agency-led legislative concepts may result in bills that will be introduced during the 2023 legislative session. Legislative concepts serve to seek authority for the advancement of Board and department goals, objectives, and priorities, or to address barriers resulting from current or lack of existing statutes.

Development of legislative concepts follows an iterative process that includes engagement with the Board, department leadership, stakeholders, and the Governor's Office. Placeholders for the 2023 legislative concepts were submitted to the Department of Administrative Services (DAS) and the Governor's Office on April 15, 2022, and final legislative concept language must be submitted to DAS no later than June 3, 2022. Concept review at the highest level of the Executive Branch generally focuses on alignment with statewide budget and policy considerations and with the Governor's policy priorities.

A cornerstone to the success of both the Board and department is ensuring the department is a sound, financially stable organization that can ensure resources are available to accomplish its core business and meet its statutory obligations. The impact of years of increasing fire costs have been exacerbated by a system reliant on shifting the department's internal resources to cover those costs pending reimbursement. This has put the department in a situation where those internal resources are being used to keep the department solvent rather than being used for the services they were intended to fund. To address this situation, the department is proposing two legislative concepts to reform the state's long-standing approach to funding wildfire response.

BACKGROUND AND ANALYSIS

Emergency Fire Funding Fix. State Forester Mukumoto convened the Emergency Fire Funding Task Force to develop recommendations for a sustainable emergency fire funding system that does not rely on fixed department operational funds or other internal resources. The task force provided a significant amount of input that the department considered in its development of two legislative concepts (LC) for the 2023 Session. The first aims to directly improve the department's financial viability by requesting General Fund to cover gross fire cost debts the department is already carrying and those that will be incurred prior to any potential future legislation taking effect. The second is the formation of a funding and governance structure to manage future emergency fire costs.

LC # 1: One-Time Department Stabilization Appropriation. Appropriates $250 million in General Fund (GF) dollars to ODF to address the financial ramifications resulting from years of rising wildfire costs. This appropriation would allow the department to become current on emergency fire costs by covering state net fire costs; cash to hold debt included in gross state fire costs until reimbursed; and allow the department to return funds borrowed from other agency programs. The primary purposes of this legislative concept are to:

- Make the department whole by freeing up budgeted funds that were used to pay fire season costs but have not yet been reimbursed so those funds can be put to their intended uses.
- Ensure the department has access to cash resources during gap fire seasons (fire seasons that will occur prior to, and shortly after, the enacting of the legislation) until a long-term fix is in place and adequate revenues are available.

LC # 2: Sustainable Emergency Fire Funding. Creates the Oregon Smoky Day Fund (OSDF) to allow ODF ready access to financial resources necessary to cover future emergency wildfire costs and creates a governance structure, the Oregon Smoky Day Committee (OSDC), to provide oversight of the fund. The key components of this legislative concept are as follows:

- Establish an interest-bearing account that would be separate from the General Fund and could accept all revenue sources.
    - The fund would be capped at twice the rolling 3-year average of ODF's gross wildfire costs.
    - The Oregon Forest Land Protection Fund (OFLPF) and Emergency Fire Cost Committee would be abolished and superseded by the OSDF and the OSDC. OFLPF revenues will be redirected to the new fund.
    - Current OFLPF revenues will be indexed for inflation back to 2007 levels and for future years.
- Funds would be continuously appropriated to ODF to cover the department's suppression costs for fires on or threatening ODF-protected lands that are more than a district's budgeted resources.
- Fund oversight will be provided by the OSDC whose members shall be appointed by the Board of Forestry. The five voting members will represent the various revenue streams into the fund and determined based on

proportion of revenue streams' contributions to fund. There will also be ex-officio members of the OSDC representing governing and oversight bodies.
    - The OSDC shall promulgate rules directing fund administration and use.
    - Additional oversight will be provided by way of an annual report to Ways and Means that will include revenues, expenditures, fund balance, etc.
- An ongoing need for revolving revenue has been identified at $61 million per year based on the departments best available data. While the department and the task force considered many options, the department is requesting that the revenue for the fund come from the current OFLPF revenue streams with inflation adjustments (approximately $15 million per year) and a General Fund allocation ($46 million). To date, landowners' contributions to the OFLPF have been matched by General Fund, and it is believed that this precedence will continue. A few other revenue options considered included:
    - Increasing the Corporate Income Tax.
    - Increasing or tapping into the state's Estate Tax.
    - Dedicating 5% of state Lottery revenues.

Ultimately, there were several factors that led to this funding proposal. First, the inflation adjustment to the current OFLPF revenue streams is long overdue and necessary. Additionally, there is broad acknowledgement that Oregon's wildfires impact all Oregonians, hence the General Fund component. An allocation is the most logical pathway for General Fund dollars due to a high level of uncertainty around whether there would be support for diverting all or part of an existing revenue stream to wildfire funding (corporate income or estate taxes) and the recognition that many of the revenue streams considered ultimately feed into the General Fund anyway.

RECOMMENDATION

The department recommends the Board approve the two legislative concepts for submission to the Department of Administrative Services by June 3, 2022.

NEXT STEPS

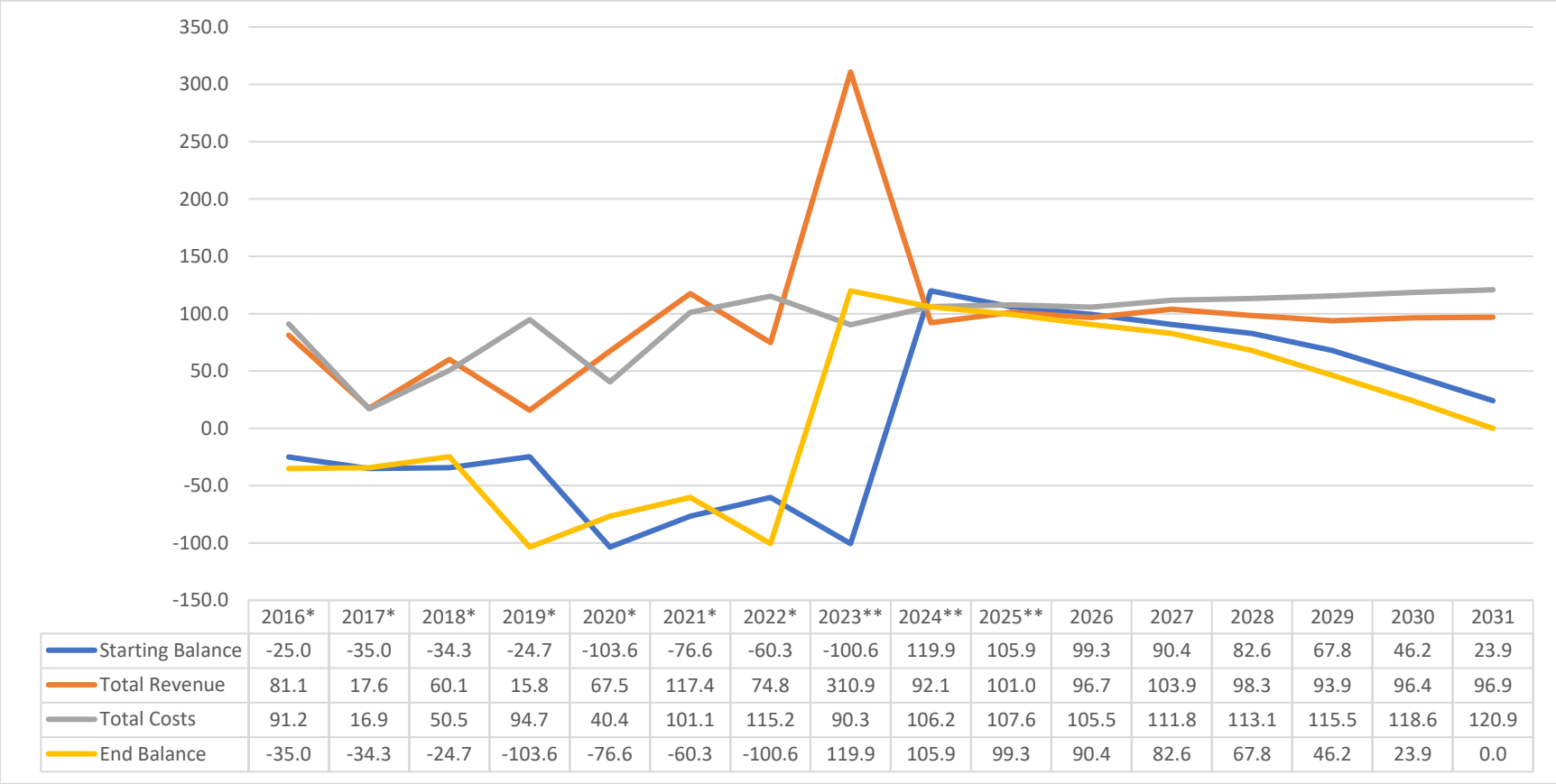
The department will submit final legislative concepts to the Department of Administrative Services by June 3, 2022. For the remainder of the year, the department will work with DAS and Legislative Counsel to fully develop the language that will be forwarded to the Governor for consideration. If approved by the Governor, these concepts would be introduced as bills in the 2023 Session, at which point the department will be strongly supporting the bills and helping legislators understand the importance of fixing the state's emergency fire funding structure. The department will respectfully request the Board's support and assistance with those efforts.

ATTACHMENTS

(1) Financial Projections to 2031

Financial Projections to 2031

$250 million in initial stabilization funding along with $61 million in annual revenue effective 2025 allows a sustainable fund through the upcoming biennia.



	2016*	2017*	2018*	2019*	2020*	2021*	2022*	2023**	2024**	2025**	2026	2027	2028	2029	2030	2031
Starting Balance	-25.0	-35.0	-34.3	-24.7	-103.6	-76.6	-60.3	-100.6	119.9	105.9	99.3	90.4	82.6	67.8	46.2	23.9
Total Revenue	81.1	17.6	60.1	15.8	67.5	117.4	74.8	310.9	92.1	101.0	96.7	103.9	98.3	93.9	96.4	96.9
Total Costs	91.2	16.9	50.5	94.7	40.4	101.1	115.2	90.3	106.2	107.6	105.5	111.8	113.1	115.5	118.6	120.9
End Balance	-35.0	-34.3	-24.7	-103.6	-76.6	-60.3	-100.6	119.9	105.9	99.3	90.4	82.6	67.8	46.2	23.9	0.0

** Costs are already be incurred by the department*

*** Costs that will be incurred by future fire seasons before revenue is fully engaged*

Board Closing Comments and Meeting Wrap Up