

**RATIONALE FOR MY  
DECISION**

ON

**Teal Cedar Products Ltd.'s**

**2001 to 2005 FOREST DEVELOPMENT  
PLAN (FDP)**

**Amendment # 49**

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## 1. My Legal Authority as a Statutory Decision Maker

Section 41(1) of the *Forest Practices Code of British Columbia Act (FPC)* provides that a district manager *MUST APPROVE* an operational plan if:

- a) *the plan or amendment was prepared and submitted in accordance with the FPC, the regulations and the standards, and*
- b) *the district manager is satisfied that the plan or amendment will adequately manage and conserve the **forest resources** [emphasis added] of the area to which it applies.*

**Forest resources** are defined in the *FPC* as “resources and values associated with forests and range including, without limitation, timber, water, wildlife, fisheries, recreation, botanical forest products, forage and biological diversity”.

The discretion granted to me by section 41(1)(b) is not unlimited. Statutory discretion must be exercised within the boundaries set out in the legislation and by the common law principles of administrative fairness, i.e., I cannot impose additional content requirements on licensees that are outside of the legal requirements.

I considered the *statutory* [emphasis added] limit of my discretion by applying the rules of statutory interpretation. This involves a consideration of the context within which the statutory power is granted. A fundamental part of the context I considered is the **PREAMBLE to the CODE**, which states:

WHEREAS British Columbians desire sustainable use of the forests they hold in trust for future generations; AND WHEREAS sustainable use includes

- a) managing forests to meet present needs without compromising the needs of future generations,
- b) providing stewardship of forests based on an ethic of respect for the land,
- c) balancing economic, productive, spiritual, ecological and recreational values of forests to meet the economic, social and cultural needs of peoples and communities,

- including First Nations,
- d) conserving biological diversity, soil, water, fish, wildlife, scenic diversity and other forest resources, and
  - e) restoring damaged ecologies;

As the *FPC* and the *Forest Act* comprise part of the Province's statutory forest management regime, they set the context within which statutory interpretation should be determined. For example, the contractual rights of licensees, as reflected in the terms of their *Forest Act* tenure agreements, form part of the context for decision making. This is not to say that the terms of the tenure agreement can restrict my discretion with respect to evaluating whether or not a proposed plan satisfies the "adequately manage and conserve test". However, the existence of those contractual rights is one factor to be considered as part of balancing the economic, social and environmental values. Also to be considered is the *Ministry of Forests Act*, which sets out the ministry's mandate.

The **common law** rules of administrative fairness, on the other hand, limit the discretion of statutory decision makers by requiring that decisions on whether to approve or not approve a proposed operational plan must be made in a manner that is fair, reasonable, and legally defensible. It is not defensible for statutory decision makers to base statutory decisions on irrelevant considerations, or to exceed their statutory authority. For example, the courts have recently confirmed that statutory decision makers must avoid mixing political issues with their duties as statutory decision makers, and that broad land use decisions should be made by cabinet, unless the power to make them is expressly or by necessary implication, granted to the statutory decision maker in the enabling statute.

Administrative fairness also requires that decisions must not be made arbitrarily. Having an adequate evidentiary basis is a fundamental test for the reasonableness of any statutory decision. Unlike determinations made by the courts with respect to criminal matters, which have to be proved "beyond a reasonable doubt", the standard of proof for FDP approval is the "balance of probabilities". *This means that prior to approving a proposed plan, I must be satisfied that it is more likely than not that the plan satisfies both the 41(1)(a) and 41(1)(b) tests that were explained previously.* The consequence is that prior to not approving a proposed plan, I must be satisfied that it is more likely than not that the plan fails to satisfy one or both of those tests. An adequate evidentiary basis, therefore, is one that has enough weight to tip the balance one way or the other – either toward plan approval or plan non-approval. In weighing the evidence, the statutory decision maker must be unbiased, and must not start with a preconceived presumption either against or in favour of approval of the plan. I must balance what may appear to be conflicting statutory requirements. I did this by weighing the evidence and information related to mandatory content, along with information concerning "other" forest resources.

## 2. REVIEW AND COMMENT

On May 17, 2005, a proposed amendment to the approved 2001 – 2005 FDP, under FL A19201, was received from Teal Cedar Products Ltd. The plan was advertised and available for public review and comment from May 17, 2005 till July 18, 2005.

The proposal would add 9 cut blocks (269 ha, 128,860 m<sup>3</sup> total) in the Norrish Creek area.

Norrish Creek is located north of the Fraser River and about 12 km east of Mission. Norrish Creek has been identified as an S1 fish stream and the alluvial fan at the base of the watershed has extensive rural development. A Canadian Pacific Railroad (CPR) rail line also crosses the fan. The Fraser Valley Regional District (FVRD)/Central Fraser Valley Water Supply Services uses the upper portion of the watershed as a community water supply and has a filtration plant and pipeline in the lower portion of the watershed. The Teal Cedar Products Ltd. proposal is restricted to the lower portion of the watershed outside of the Norrish Creek Community Watershed.

As required under the FPC Act, following the review and comment period, the proponent submitted further information including a copy of written comments received, responses to comments and a summary of revisions made to the proposed plan. This information was included as part of the final plan submission received on December 21, 2005.

Under section 41(2) of the *Forest Practices Code of British Columbia Act* (FPC Act), I sent letters to the licensee on February 16, 2006 and February 24, 2006 requesting additional information. This included the request for information addressing the risk of debris and sediment entering Norrish Creek, the risk of damage to the Central Fraser Valley Water Supply Services water supply pipeline as well as an Equivalent Clearcut Area calculation (ECA) that would include both the lower Norrish Creek area and the Norrish Creek Community Watershed. The licensee responded to these requests with additional information submissions on June 20 and June 21, 2006.

### 3. CHRONOLOGY OF EVENTS LEADING TO DECISION

#	Event	Date
1	Licensee submitted proposed amendment to approved 2001-2005 FDP under Forest Licence A19201.	May 17, 2005
2	Public review period from May 17, 2005 to July 18, 2005	May 17, 2005
3	First Nations Consultation May 25, 2005 to July 25, 2005.	May 25, 2005
4	Licensee provided Chehalis Consulting Ltd. report on "Preliminary Results of Lower Norrish sediment Source Surveys and Potential Impacts from Harvesting as Proposed in Amendment #49."	Sept 21, 2005
5	Licensee held public meeting in Deroche and solicited additional public input.	Sept 22, 2005
6	District Manager met with local residents at Norrish Creek to explain his role in the planning process.	Oct 22, 2005
7	MoFR regional office geomorphologists visited Norrish Creek to do an overview assessment and they suggested waiting for Chehalis Consulting Ltd final report prior to providing their advice on risks in watershed.	Nov 9, 2005
8	Chehalis Consulting Ltd. provided final report	Dec 21, 2005
9	District Manager sent letter to licensee (section 41(2) FPC Act) and requested that risks to sediment entering Norrish Creek and potential for damage to FVRD water supply pipeline be addressed	Feb 16, 2006
9	MoFR geomorphologist (Tom Millard) provided overview assessment of Norrish Creek risks (based on Nov field visit) as well as a critique of the Chehalis Consulting Ltd. report. Significant deficiencies were identified in Chehalis report.	Feb 17, 2006
10	District Manager sent a second letter to the licensee (based on MoFR geomorphologist report) requesting that an ECA calculation be completed for the entire Norrish Creek Watershed area.	Feb 24, 2006
11	Licensee withdrew Chehalis Consulting Ltd. report and advised that they would be undertaking an ECA calculation as per the District Manager's instructions.	Mar 7, 2006
12	Licensee submitted Preliminary Watershed Assessment for Norrish Creek (including ECA calculation) prepared by Madrone Environmental Services Ltd.	June 20, 2006
13	Licensee submitted signed and sealed letter from Madrone concerning proposed operations.	July 24, 2006

#### **4. Referrals**

The licensee distributed copies of the proposed amendment to:

- Ministry of Forests and Range (MOFR)
- Ministry of Environment (MOE)
- Fraser Valley Regional District (FVRD) – JAMES Plant and Central Fraser Valley Water Supply Services
- FVRD - Planning Department
- District of Mission
- Sto:lo Nation
- Leq'a:mel First Nation
- Scowlitz First Nation

#### **5. Summary of First Nations Consultation**

Consultation for FDP amendment #49 was initiated on May 25, 2005 with letters sent by the Ministry of Forests to 3 different First Nations (Sto:lo Nation, Leq'a:mel First Nation, Scowlitz First Nation) with traditional territory in the areas affected by the amendment. Consultation with First Nations has included correspondence, phone calls and a meeting with the Scowlitz First Nation. A summary of the consultation completed for this plan by the MOF and the licensee and copies of consultation related correspondence applicable to the FDP amendment are included in the FDP and amendment's background binder and in the final version of the plan submitted by the licensee.

Along with the two consultation letters that were sent (May 25, 2005 and July 6, 2005) to the 3 first nations mentioned above, follow up phone calls were made with the offer of a meeting to review the amendment. No response was received from either the Sto:lo Nation or the Leq'a:mel First Nation. A meeting was arranged to review the amendment proposal with the Scowlitz First Nation.

MoFR staff and licensee representatives met with Chief John Pennier (Scowlitz First Nation) on July 6, 2005. The Scowlitz First Nation's main concern was with the location of the proposed cutblocks in relation to the community water intake and potential impacts on water quality. The intake is located just inside the boundary of the Norrish Creek Community Watershed and all proposed cutblocks are outside of the Community Watershed boundary. Teal Cedar also advised that there would be a 100 m buffer around the filtration plant. No concerns with specific traditional uses in the area under the plan were identified.

#### **6. Summary of Public and Other Agency Comments**

##### **Public Review Summary**

The amendment was advertised in the Abbotsford Times once on May 17, 2005 and again on May 27, 2005. It was made available for public review and comment for a period of 60 days from May 17, 2005 to July 16, 2005 at the Teal Cedar Products Ltd. office at Triggs Road in Surrey and the Ministry of Forests office in Chilliwack.

Teal also advised that they obtained a list of local property owners in the vicinity of the Norrish Creek alluvial fan from the Fraser Valley Regional District and sent a notification of the proposed plan to each property owner on the list. Copies of the amendment were provided by Teal to private property owners upon request. Teal explained that several people expressed concern and had questions regarding the amendment and Teal responded by hosting a public meeting to review the amendment on September 22, 2005 at the FVRD office in Deroche. The Ministry of Forests participated in this public meeting. Teal has further advised that they met with several property owners individually to review the amendment and answer questions.

### **Summary of Public Comments and Teal Cedar Products Ltd. Responses**

- Proposed logging activities by Teal will generate additional gravels, sediment and peak flows in Norrish Creek resulting in an increased risk of flooding to properties.
- How will logging affect the water in local wells?

The above two concerns were originally addressed in the Teal Cedar Products Ltd. December 21, 2005 final plan submission based on recommendations made by Chehalis Consulting Ltd. The Chehalis Consulting Ltd. report was later withdrawn by Teal. Teal then contracted Madrone Environmental Services Ltd. and had an Equivalent Clearcut Area (ECA) calculation prepared for the entire Norrish Creek Watershed including the Norrish Creek Community Watershed and the portion of the watershed below the community watershed.

Teal provided the following replacement responses to address public concerns.

“A draft report of the Watershed Assessment for the Norrish Creek Community Watershed and Norrish Creek Drainage has been completed by Madrone Environment Services Ltd. (Madrone). This report explains how the ECA numbers are being interpreted in relation to proposed operations.”

“Terrain Stability Field Assessments (TSFA) for all cutblocks within amendment #49 have now been completed. TSFA reports completed by Chehalis Consulting for cutblocks NC1, NC3, NC20, NC24 and NC26 have been peer reviewed by Pierre Friele, P. Goe. Of Cordilleran Geoscience. The TSFAs for cutblocks NC5, NC7 and NC28 have been completed by Madrone. The TSFA reports contain recommendations to reduce the risk of sedimentation entering Norrish Creek. Teal will comply with those recommendations. As specified in the reports, there are no areas within any of the cutblocks that present moderate to high post-logging landslide hazard for the proposed development activities.”

“A windthrow hazard Assessment was completed along the northern boundary of cutblock NC3 (ie. along the gully side wall of Naknumara Creek) by Madrone. Teal will comply with the recommendations in that report.”

“With regard to the commitments made by Teal in relation to the Chehalis Consulting Ltd. hydrological assessment: that assessment report was withdrawn; therefore, the results and recommendations in that report no longer apply. Madrone has completed a Watershed Assessment for the Norrish Creek Community Watershed and Norrish Creek



drainage. The report indicates that the proposed forest development for the Norrish Creek drainage will result in a low peak flow hazard. This response is to cancel and replace the responses that Teal made in reference to recommendations in the Chehalis Consulting Ltd. hydrological assessment report.”

- There was no geotechnical information provided with the amendment.

The licensee responded that, at the time of submission, Terrain Stability Field Assessments (TSFAs) had not been completed for any of the proposed cutblocks and advised that TSFAs are generally completed after most of the cutblock engineering/layout is complete. TSFAs are not required to be submitted with the FDP. TSFAs will be completed for all cutblocks, which required them, prior to Cutting Permit applications.

- Cutblock NC30 is visually sensitive from private properties and has significant recreational values (ie. hiking trails etc.).

The Licensee responded by removing cutblock NC30 from the amendment proposal.

- Cutblock NC28 is in a high visibility area.

Teal responded that cutblock NC28 is in a scenic area and that a Digital Terrain Model (DTM) will be completed for this block to determine the amount of modification that can occur. Harvesting will be consistent with the results of the DTM. The licensee further stated that NC28 will have a partial cut silviculture system (CC/R).

- Noise from logging in the vicinity of Thunderhorse Ranch may have a negative impact on business at the ranch.

Teal explained that they have withdrawn cutblock NC30 from the amendment (the cutblock closest to Thunderhorse Ranch). Cutblock NC28 is the next closest cutblock and it is approximately 3 km away from the ranch. The licensee further advised that the cutblock has a west to north-west facing aspect so that the majority of sound generated from the helicopter should travel up the valley and away from the private properties on the Norrish Creek alluvial fan. The helicopter will only be active on this cutblock for about two weeks.

- There was concern expressed as to whether or not all concerned parties had been properly informed about the amendment.

Teal explained that, in their opinion, reasonable efforts were made to inform all concerned parties about the amendment (see Public Review Summary).

- There was public concern expressed about the dust, noise and traffic that logging operations may create. Questions arose as to when Teal had plans to conduct the logging operations. Concern was expressed that, if the logging took place in summer or spring, it would have a negative impact on enjoyment of private property.

The licensee advised that logging operations could potentially occur at any time of the year, but would most likely occur in the spring/summer/fall. Teal explained that the dust would be restricted to gravel logging roads which are not located in the vicinity of private properties. The only time that the property owners may hear noise from logging is when

the helicopter is working in the lower Norrish Creek valley. Teal explained that, during logging operations, there will be highway logging trucks hauling down the Norrish Creek Mainline and over Bell Road through Dewdney to get to the Loughheed Highway. Teal advised that most of the properties are not adjacent to the section of road that logging trucks will be hauling on.

- Concern was expressed over the presence of endangered species living in the area and where the displaced wildlife would go.

Teal advised that there are no known occurrences of endangered species in the vicinity of the amendment #49 cutblocks and that there is adequate surrounding timber to accommodate wildlife.

### **Fraser Valley Regional District (FVRD)**

- The FVRD asked that the licensee undertake comprehensive geotechnical and hydrological studies which consider the cumulative effects of all the proposed cutblocks and roads on slope stability, sediment transport, risk to downstream properties and that the proposed forestry activities not increase risk to downstream properties and infrastructure. They further requested that the licensee implement the recommendations of the geotechnical and hydrological assessments described above. The FVRD also referenced reports that they have on file that they said should be considered by the professionals carrying out the assessments.

Please see page 4 of “Summary of Public Comments and Teal Cedar Products Ltd. Responses”.

- The FVRD requested that the licensee ground truth and flag the boundary of the Norrish Creek Community Watershed to avoid encroachment.

Teal advised that, for cutblocks that are adjacent to the Community Watershed boundary, Teal will identify and flag the boundary so as to ensure that proposed cutblock NC20 and NC22 do not encroach into the Community Watershed.

- The FVRD requested that the licensee confirm and flag the boundary of private lands adjacent to proposed block NC30 to avoid encroachment.

Teal advised that cutblock NC30 has been removed from the amendment.

- The FVRD requested that the amendment be referred to Canadian Pacific Railway and to the City of Abbotsford.

The licensee responded that they referred the amendment to Canadian Pacific Railway and the City of Abbotsford on June 29, 2005.

- The FVRD suggested that the licensee host a public information meeting in the community to present the FDP amendment to owners of property on the Norrish Creek fan.

The licensee advised that a public information meeting was held on September 22, 2005

- The FVRD requested that the licensee follow up with them to demonstrate that FVRD concerns have been addressed and also to provide copies of any geotechnical or hydrological assessments completed.

Teal advised that a copy of Teal's responses to the FVRD's comments, comments received from the property owners in the vicinity of the Norrish Creek alluvial fan as well as a copy of the Madrone Preliminary Watershed Assessment were forwarded to the FVRD.

- The FVRD expressed concern that the proposed cutblock NC1 is located within 200 m of the Central Fraser Valley Water Supply Services (CFVWS) filtration Plant and that the filtration plant represents a multi-million dollar investment in infrastructure that ensures potable water supply to over 200,000 people.

The licensee responded that the falling boundary of cutblock NC1 will be a minimum of 100 m away from the filtration plant. In an email dated June 29, 2005, Teal indicated that they informed the CFVWS that the boundary of the cutblock NC1 would be a minimum of 100 m away from the filtration plant and enquired whether the CFVWS considered this proposed buffer to be adequate. Teal indicated that they further provided a 1:5000 scale base map of cutblock NC1 to Derrick Casey of the CFVWS. This map illustrated the proposed 100 m buffer which they state Derrick Casey indicated would be adequate.

### **Central Fraser Valley Water Supply Services (CFVWS)**

- The CFVWS requested that a qualified registered professional confirm the rationale for not having a terrain assessment completed for proposed cutblocks NC1/NC9/NC20/NC22 and they further requested that it be shown why there would be minimal risk of landslide initiation during the block layout phase.

Teal advised that cutblock NC9 has been removed from the amendment and that cutblocks NC1, NC20 and NC22 will have a TSFA completed, if required, prior to Cutting Permit application submission. Teal stated that cutblocks and roads will be consistent with the TSFA reports.

- The CFVWS requested that, for cutblocks NC3, NC5 and NC7, a qualified registered professional complete a terrain assessment for the proposed logging roads complete with a mitigation strategy to reduce risk of landslide initiation. They further requested confirmation that the road layout, design and hydrology would be assessed with respect to potential for landslides prior to and during construction.

The licensee responded that a TSFA will be completed for cutblocks NC3, NC5, NC7, and their associated roads, prior to Cutting Permit and/or Road Permit application submission and that the cutblocks and roads will be consistent with the TSFA report. The licensee stated that, if required, mitigation strategies to reduce risk of landslide initiation will be included in the TSFA report and, if recommended by a Professional Engineer in the TSFA report, road layout and design and hydrology will be assessed during road construction.

- The CFVWS requested that, for cutblocks NC3, NC5, NC7, the licensee complete a review of all major culvert and bridge crossings for debris passage complete with mitigation strategies should capacity be a concern.

Teal responded that for roads accessing cutblocks NC3, NC5 and NC7, if required, a Professional Engineer will complete a Site Plan and a conceptual design of major culverts and bridges that require replacement or are part of new road construction. Existing culverts and bridges will be inspected and monitored as per Forest Practices Code standards.

- The CFVWS asked that a review of harvesting methods be completed to ensure that ground scars are minimized, furrowing does not occur and that impacts on hydrology be assessed.

The licensee advised that ground based harvesting will occur in such a manner as to not cause excess rutting. Measures to mitigate rutting such as the use of random overland trails, rehabilitation of designated bladed skid trails, temporary access structures for all streams and adhering to rainfall shutdown criteria will be implemented.

- The CFVWS requested that, for cutblocks NC3, NC5 and NC7, windthrow impacts be assessed along the cutblock fringes to ensure windthrow related landslides do not impact Naknamura Creek.

Teal responded that windthrow assessments will be completed along the fringes of cutblocks NC3, NC5 and NC7 to ensure windthrow related landslides do not impact Naknamura Creek. The licensee further stated that, if required, windfirming will be conducted to reduce windthrow hazards.

- The CFVWS asked that the manager of the water supply system be consulted with at key stages of cutblock development. The stages identified were prior to construction, when relevant reports are available, at the 50% and 90% stages of road construction and timber harvesting and at the deactivation stage to ensure that all mitigation strategies have been implemented.

Teal responded by stating that they will be following strict Forest Practices Code standards/requirements along with following and implementing the recommendations of a TSFA report and therefore they do not believe that consulting with the water supply system manager is warranted.

- The CFVWS stated that roads in cutblock NC22 are known to be unstable. They further advised that reconstruction of these roads must be addressed in the terrain assessment report outlining mitigation strategies to reduce long term likelihood of landslide initiation. The CFVWS also requested that a qualified registered professional confirm that the road layout, design and hydrology is assessed adequately to minimize landslide potential both prior to, during and after logging activities.

Teal responded that a TSFA will be completed for cutblock NC22 and its associated roads prior to Cutting Permit and/or Road Permit submission and that the cutblock and roads will be consistent with the report. Teal further stated that, if required, mitigation strategies to reduce the long term likelihood of landslide initiation will be included in the TSFA report. If recommended by the Professional Engineer in the TSFA report, Teal

indicated that road layout, design and hydrology will be assessed during and after road construction.

### **Canadian Pacific Railway (CPR)**

- CPR stated that their primary concern was that proposed cutblocks may generate additional gravels, sediment and peak water flows in Norrish Creek. CPR asked to review the hydrological assessment to determine the potential for the proposed Teal Cedar Products activity to produce additional sediment, increased sediment transport and increased peak water flow.

- CPR stated that any additional flow or sediment as the result of proposed logging activity within Norrish Creek would not be acceptable. CPR noted that the baseline flow and sediment load within Norrish Creek has not been established and that this may be required before an assessment can be made of the additional flow and sediment attributed to the TCP activity.

- CPR suggested that, if additional sediment and flow are expected within Norrish Creek as a result of any third party activity, the party responsible for the increases should become involved in capacity improvements or extraction of gravel upstream of the CPR and Ministry of Transportation bridges to assure safety of the bridges and the neighbouring landowners from potential flooding.

Teal addressed these concerns with a standard response after the Chehalis Consulting Ltd. report was withdrawn. Teal stated that a draft report of the Watershed Assessment for the Norrish Creek Community Watershed and Norrish Creek Drainage was completed by Madrone Environmental Services Ltd. (Madrone) and the report indicates that the proposed forest development for the Norrish Creek drainage will result in a low peak flow hazard. They advised that TSFAs for all of the cutblocks within amendment #49 have been completed, the reports contain recommendations to reduce the risk of sedimentation entering Norrish Creek and that Teal will comply with these recommendations. Teal stated that the reports indicate that there are no areas within any of the cutblocks that present moderate to high post logging landslide hazard for the proposed development activities.

Teal also explained that they conducted an on-site review of the railway bridge and gravel extraction area with CPR on October 7, 2005. During the review, there was some discussion around Teal becoming involved with the gravel extraction process, but no commitments were made.

- CPR commented on poor road construction practices that they had seen on a site visit to the Norrish Creek drainage and that such practices would result in additional peak run-off, sediment supply and transport within the Norrish Creek drainage.

Teal explained that another licensee, not connected to Teal Cedar Products Ltd., operating in the area was responsible for the road construction practices that CPR identified.

## **City of Abbotsford**

- The City of Abbotsford expressed concern with the integrity of the road access for getting supply and crew trucks to the filtration plant at Dixon Lake. They were also concerned that the water supply line paralleling the road not be damaged.

Teal explained that the Norrish Creek mainline (the road to the filtration plant and up to Dixon Lake) is under a Road Permit held by Canfor. Licensees operating in the area must enter into a Road Use Agreement with Canfor to use the road for industrial operations. The licensees operating in the area are responsible for maintaining the sections of road they are using. The Norrish Creek mainline will be maintained by Teal or other licensees/contractors up to the filtration plant, however, Teal advised that they could not make any commitments to maintaining the Norrish Creek mainline beyond the filtration plant.

- The City of Abbotsford advised that any activities that increase silt levels above the intake structure are a concern.

Teal responded that all of the cutblocks in the amendment are located below the water supply intake.

- The City of Abbotsford expressed concern with additional public access that might be created by development under this amendment proposal. They explained that a forest fire caused by the public would have devastating impacts on the Abbotsford and Mission water supplies and therefore assistance in minimizing public access would be appreciated. They asked that spur roads and haul roads be blocked when not needed for work.

Teal advised that most spur roads would be deactivated within three years of harvesting operations.

## **Ministry of Environment (MOE)**

- The MOE expressed concern that block NC28 is located within DWR polygon HT 10 and is the only polygon located within the entire watershed that is identified for management as DWR (Type 3). "If logging proceeds as currently proposed, it appears that the majority of the polygon will be harvested and function would be, at minimum, very negatively impacted or perhaps totally lost." Unless other options can be found in this area, MOE indicates that they still intend to manage HT 10 as DWR through the establishment processes consistent with the MOF/MWLAP UWR MOU.

Teal responded by advising that they contracted Keystone Wildlife Research Ltd. (Keystone) to complete a DWR study of polygon HT 10. Keystone stated that the Freeman study in 2002 (Fraser Timber Supply Area Mule and Black Tailed Deer Management Plan, Part II) classified this unit as low priority for management due to low snow depths in the area. "The DWR unit HT 3 is 2 km to the east and, while this may be in a different watershed, it is in close proximity. There are also other additional constraints within the watershed that may protect some habitat. HT 10 appears to be cut off at the trim sheet boundary when similar forest type continues to the south. The harvest plan is to selectively harvest a portion of the block where there are visual constraints and clear cut an additional 10 ha with some retention so that portions of the polygon will

remain. This will reduce short term cover, but may improve future forage opportunities.” “There is suitable deer habitat further to the south of the block which was previously classified as intermediate habitat. The DWR unit HT 10 is marginal DWR. Only 1 pellet group was found during field assessment and winter habitat attributes such as lichens and shrub forage were lacking. Snow loads are not limiting in the area and there is adequate forest in the area to support deer. Logging Block NC 28 can proceed with relatively minor affects on deer in the area.”

#### **Ministry of Forests and Range (MoFR)**

- The MoFR questioned whether proposed cutblock NC 28 overlapped with an MOE proposed DWR polygon from the Dec. 21, 2004 Notice and advised that, if this was the case, Teal should address how DWR concerns have been considered in the plan.

Please see Teal’s response to the MOE comment.

- The MoFR asked for clarification around area under the plan for the amendment.

Teal clarified that the area under the plan includes all proposed cutblocks and roads and any area within 150 meters of these proposed cutblocks and roads.

- The MoFR requested a rationale from the licensee regarding the young age classes (ie < 101 years) that they are proposing harvesting within.

Teal advised that increment borer measurements indicated that all of the proposed stands are 50 years of age or older. Teal further explained that the majority of the stands contain Hw and Ba with a minor component of Fd and Cw and they believe that stump evidence suggests that the sites are more suitable for growing Fd and Cw. They also point out that many of the Hw stems are infected with dwarf mistletoe and are of poor quality. The proposal is to clearcut the stands and replace with Fd and Cw.

- The MoFR asked for a rationale for why the licensee was proposing harvesting cutblocks outside of their traditional chart areas.

Teal advised that all cutblocks, outside of their chart areas, were removed in the final plan submission.

In response to the MoFR request that Teal address the risk for damage to the Central Fraser Valley Water Supply Services water supply pipeline, Teal advised that it will ensure its road construction/maintenance crews, truck drivers, etc. are made aware of the pipeline location and are instructed not to damage it.

## **7. Wildlife Concerns**

No Species at Risk concerns, conflicts with Old Growth Management Areas or with Grizzly Bear WHAs were identified in the review of this amendment. Ungulate Winter Range issues are addressed under MOE comments.

## **8. Landslide and Sedimentation Hazards**

An overview assessment for Norrish Creek completed by the Coast Forest Region Research Geomorphologist recommended that an evaluation of changes to peak flows be

undertaken in consideration of the entire watershed since logging in the entire watershed, not just the lower portion of the watershed, affects the alluvial fan. Teal Cedar Products Ltd. subsequently contracted Madrone Environmental Services Ltd. (Madrone) to carry out an assessment to address this concern.

In order to assess peak flow issues, Madrone carried out an Equivalent Clearcut Area (ECA) calculation for the watershed. An ECA describes a recovering disturbance in terms of what it would currently represent as an equivalent area of new disturbance. For example, if we wished to describe the hydrologic recovery of a 100 ha stand in the year 2006 that was originally harvested in 1970; the juvenile stand might now have recovered 75% of the hydrological effectiveness of the previous forest in terms of rainfall and snowfall interception, ground shading and evapotranspiration. The 100 ha juvenile stand would now be roughly equivalent (in terms of water use) to a new 25 ha clearcut.

The watershed assessment work completed by Madrone advised that there is a low hazard that the forest harvesting proposed by Teal Cedar Products Ltd. for Norrish Creek will result in adverse hydrologic impacts.

The Madrone report identified the main issues in the watershed as sediment production from roads and landslides and subsequent impacts on water quality at the community water intake as well as sedimentation and flooding on the alluvial fan. Madrone provided specific recommendations for forest harvesting and road management within the Norrish drainage to address these specific issues of concern and the licensee has committed to complying with these recommendations. The licensee has advised that Terrain Stability Field Assessments have now been completed for all cutblocks proposed under this amendment and they have committed to complying with the recommendations in these assessments as well.

Stakeholders, including local farms and the CPR, have referenced an increase in bedload volumes showing up in the alluvial fan area of Norrish Creek in the last few years whereas Madrone reports that upstream channel stabilization indicates that sediment supply to the community watershed is decreasing.

Madrone suggests that there are two potential causes for the reported increase in fan sedimentation. “The first is that channel reaches, which formerly served as sediment accumulation zones within the community watershed, are now serving as sediment sources for downstream reaches. In essence, in these reaches, sediment supply formerly exceeded sediment transport capability leading to sediment accumulation. Now, sediment supply has decreased and sediment transport capability exceeds supply leading to depletion of sediment from within the watershed, but to accumulation downstream on the fan. Essentially, the sediment reaching the fan from the community watershed is delayed sediment from the 1980s and 1990s. As the channels within the community watershed continue to stabilize, this source of sediment should decrease over time.”

Madrone offered a second possible explanation for the increases in bedload. “The second source of sediment to the Norrish fan is from within the lower portion of the drainage, outside the community watershed. This includes Rose Creek, Sally Creek and smaller drainages such as Naknamara Creek. Within the last few years, the large landslide in the upper Norrish canyon, the debris flow in Sally Creek, and possibly the recent landslide in Rose Creek have all contributed sediment to the lower watershed which has been



transported to the fan. Thus, some component of the increased sedimentation on the Norrish fan may be attributable to specific events that mobilize large volumes of sediment.” These recent landslides have not been linked to post Forest Practices Code harvesting or road construction activities.

Canfor, a former major forest licensee operating in the Norrish Creek drainage, is in negotiations with the Ministry of Forests regarding deactivation requirements as they relinquish Road Permits held in the drainage. Immediately after road works have taken place, there may be elevated levels of sediment generated by the works. This will usually decline over time as new vegetation takes hold in the denuded areas. Road works should reduce the risk of landslides and resulting large sudden flushes of sediment into the system possibly at the expense of smaller, much less significant ongoing sedimentation until vegetation takes hold. If ownership for some of Canfor’s Road Permits in Norrish Creek is transferred to Teal, the required road maintenance responsibility would further ensure that the risk of sediment being generated from existing roads is minimized.

## **9. Risks to Central Fraser Valley Water Supply Services Pipeline**

The Fraser Valley Regional District/Central Fraser Valley Water Supply Services uses the upper portion of the watershed as a community water supply and has a filtration plant and pipeline in the lower portion of the watershed. The pipeline is immediately downslope of the west side mainline road for much of its distance.

Risks to the pipeline include potential damage from any landslides that might occur as well as the potential for damage from logging trucks and other forest harvesting/construction related equipment that might be using the road in the course of harvesting and road construction operations. Teal Cedar Products Ltd. has committed to complying with recommendations contained in the Terrain Stability Field Assessments and hydrological report prepared by Madrone. Following these guidelines should minimize any potential risks associated with landslide related impacts to the water supply pipeline. Teal has further advised that road construction and maintenance crews and truck drivers will be made aware of the pipeline location and the need to exercise special care when operating near it.

## **10. Summary Remarks**

The predominant issues, throughout the review of this FDP amendment proposal, have been the potential impacts that development activities may have on sediment supply within Norrish Creek as well as the potential for significant changes in peak flows.

Although my decision has been made based on the best science available, there is always a level of risk associated with making decisions of this nature. It is my intent to meet the test of adequacy as stated in Section 41(1)(b) of the *Forest Practices Code of British Columbia Act*.

The watershed level 1 assessment has indicated that the Norrish Creek watershed, including the amendment #49 proposed operations, is below the threshold of concern for ECA. However, ECA cannot be considered independently of the slope stability potential which must be assessed by professionals prior to Cutting Permit applications. Science and the recommendations of qualified professionals have and will continue to guide activities associated with this amendment. Information and recommendations provided


through the Terrain Stability Field Assessments (TSFA) may result in a range of options for the licensee to consider for individual cutblocks. These options may already have been considered in block design or may include prohibiting harvest or modifying harvest through a reconfiguration of cutblock design prior to Cutting Permit approval.

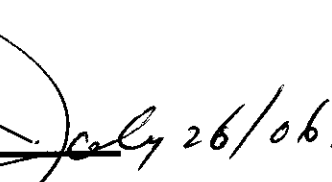
In making this determination, I have considered the potential impact of the FDP on First Nations, and the comments, concerns and recommendations received from individuals, agencies, and stakeholders. This document is not an exhaustive list of all the resources and issues that I have considered. It includes the main information I have considered in my decision.

## 11. Conclusion

This FDP amendment was submitted in accordance with the Forest Practices Code of BC Act and associated regulations fulfilling the requirements of Section 41(1) (a) of the Act. The supporting information provided by the licensee also satisfies Section 41 (1) (b) of the FPC Act in that it adequately manages and conserves the forest resources of the area to which it applies.

Therefore, it is my determination that this FDP Amendment is approved.

  
Kerry Grozier  
District Manager  
Chilliwack Forest District

  
Date