Spel̓kúmtn Community Forest
Preliminary Visual Impact Assessment for:
Blocks MI100A, MI100C and MI100D

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Introduction

This preliminary visual impact assessment is being completed for the following blocks: Blocks MI100A, MI100C and MI100D.
The blocks are located on mid slope positions above the Pemberton Valley in the upper South Miller Creek area. (see Appendix A-Viewpoint Map). The blocks are located on rolling benched sidehill terrain on southerly aspects. The visible landscape in the vicinity of the blocks can be described as a visual mosaic with a variety of natural and altered shapes, textures and canopy heights present. There are talus slopes, landslide scars, mid-slope ridges and benches, avalanche tracks, road right of ways, transmission lines and ROWs for hydro project infrastructure and previously harvested areas representing a variety of age classes. The blocks are distributed across Visual Sensitivity Unit (VSU) #106. The blocks are potentially visible from the following areas which have been identified as Significant Public Viewpoints as shown on the attached Viewpoint Map:
- VP #1 – from the Miller Creek bridge crossing on Pemberton Meadows Road
- VP #4 – from the Old High School location on Pemberton Meadows Road

Based on visual renders and on field observations these VPs have been identified as the significant viewpoint locations where the blocks will be most visible / have the greatest visual impact. The viewpoints selected all represent the views that are anticipated to be visible from the section of the Pemberton Meadows Road between the Village center and the Miller Bench FSR junction with the Meadows road.
A 3rd viewpoint was identified, and the visual impact assessed from:
- VP #5 – The Pemberton Lodge in the Village

The assessment illustrates that the blocks will not be visible from the Pemberton Lodge / Village Core area. None of the blocks included in this analysis are anticipated to be visible from the village of Pemberton.

The blocks are planned for ground-based logging systems utilizing hoe forwarding techniques.

The VSUs containing blocks which will be assessed by this VIA have the following inventory descriptors based on the Sea to Sky District Landscape inventory (classified according to the Visual landscape Inventory Procedures and Standards Manual). All of the blocks assessed in this VIA are within a portion of the landscape with visual objective of **Modification.** The visual inventory information for the visual polygon being assessed within this report is described in table 1.

Table 1

	VLU #106
Visual Quality Objective (VQO)	M (Modification)
Existing Visual Condition (EVC):	M (Modification) updated to PR (Partial Retention)
Visual Absorption Capacity (VAC):	M (Moderate)
Visual Sensitivity Class (VSC):	2 - High

The visual landscape inventory describes VLU #106 as having an existing visual condition of Modification (M). However, this descriptor is based on the condition of the visual landscape at the time of the last district level data capture in 1993. All harvesting within these VLU's contributing to the 1993 ranking have achieved visual green-up. The existing visual condition has been updated (by report author) to Partial Retention, which reflects the current status of the visual landscape.

Under Part 1, Section 1.1 of the Forest Planning and Practices Regulation (B.C. Reg. 269/2010), **Modification** is defined as:
modification: consisting of an altered forest landscape in which the alteration, when assessed from a significant public viewpoint,
(i)is very easy to see, and
(ii)is
(A)large in scale and natural in its appearance, or
(B)small to medium in scale but with some angular characteristics;

The BC Forest Practices Code Visual Impact Assessment Guidebook – 1997, provides a method for completing a numerical assessment of the percent alteration to a visible landform from previously harvested and existing non-greened-up cutblocks as well as from proposed harvesting. The Guidebook and provides targets for the range of the alteration percentage which are recommended to be achieved to meet the VQO defined in the FPPR. The guidebook recommends that for partial retention, the percentage alteration to the visible landform is between 7.1% to 18.0%.

This Visual Impact Assessment (VIA) will assess the project blocks for consistency with the regulatory objective of the blocks to meet the definition of partial retention (as provided above) and provide a numerical assessment (as per Guidebook methodology) to assess the percent alteration of the visual landscape anticipated from existing and planned harvest to demonstrate consistency with the alteration limits for the assigned VQO for each VLU.

The regulatory and numerical assessments have been completed utilizing Digital Terrain Models (DTMs) which produce simulations of the expected views from identified viewpoints by modeling the planned block shape on the existing landscape. The DTMs were produced using *Nature Studio 2* software utilizing a 1:20,000 scale TRIM digital elevation model. The digital (GIS) information utilized in creation of the DTMs has been provided by Lil'wat Forestry Ventures and by the MoFLNRO "Land and Data Warehouse". The information is somewhat limited in detail (i.e. 20m TRIM contours) and therefore the model cannot predict fine scale outcomes which may occur due to unforeseen unique local topography.
Google Earth imagery was also utilized during the planned view assessments and to identify the most significant viewpoints.

Visibility of the blocks and viewpoint selection
This assessment addresses the visual impact of the blocks from 2 viewpoints (VP #1, and VP#4) as described above. The VP's have been identified as locations where the potential for visual impact from logging is likely to be most evident. The viewpoint map identifies the location of the selected VPs. (See Viewpoint Map – Appendix A)

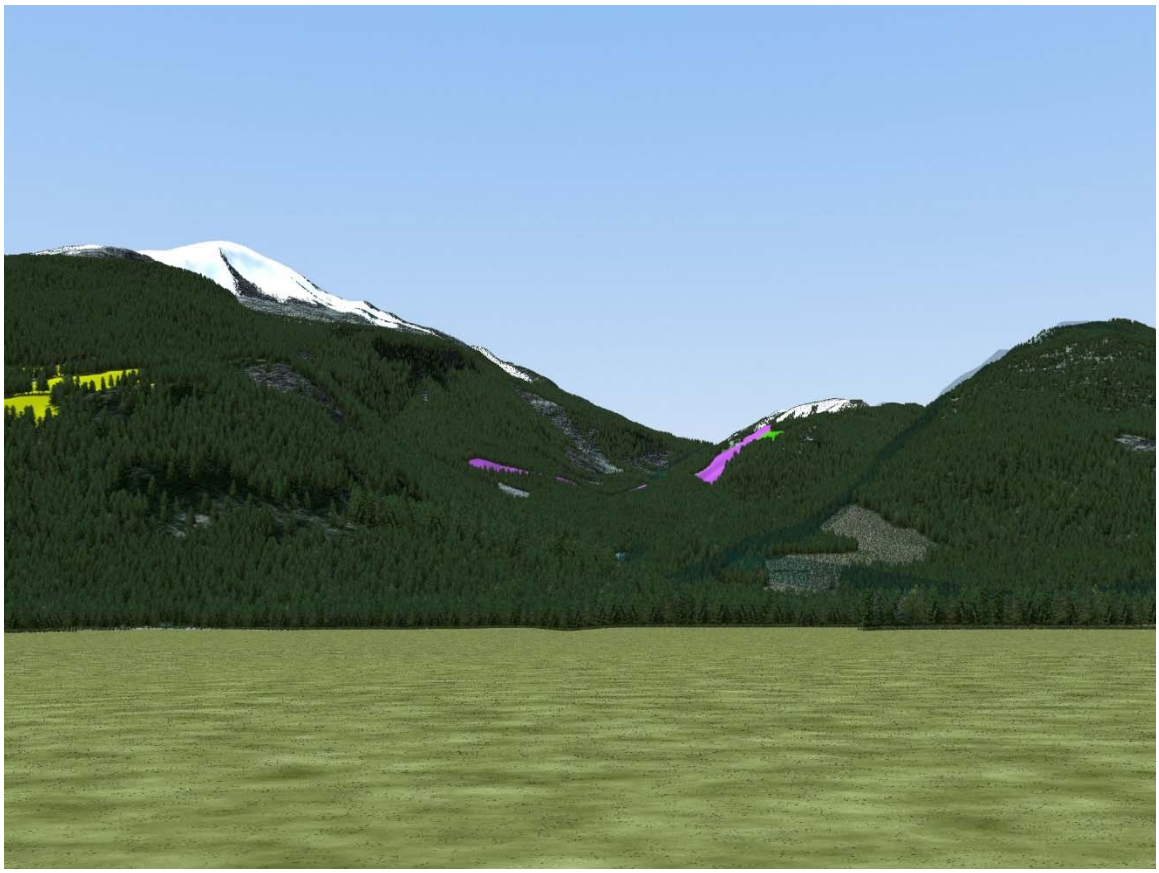
Visual Design
All of the blocks assessed in this VIA have been engineered with good visual design principles to mitigate / minimize their visual impact when viewed from Pemberton Meadows Road / Pemberton Valley. Design elements that have been implemented include the following:

- The blocks are designed with somewhat natural appearing boundaries which mimic patterns of disturbance present on the landscape. Talus slopes, landslide scars, avalanche paths and previously harvested areas representing a range of age classes are present across the visible landscape. The visual mosaic resulting from these features is a non-uniform complex with a range of shapes and textures present which increases the ability of the planned disturbance to be absorbed / blend into the visual landscape.
- The blocks are somewhat irregular and organic in shape in both plan view and perspective view. Sharp angles and linear boundaries have been avoided as much as practicable.
- The blocks have been designed to fit into the terrain and aligned so that the blocks are screened by and/or blend with natural landscape features and patterns or existing forest cover.

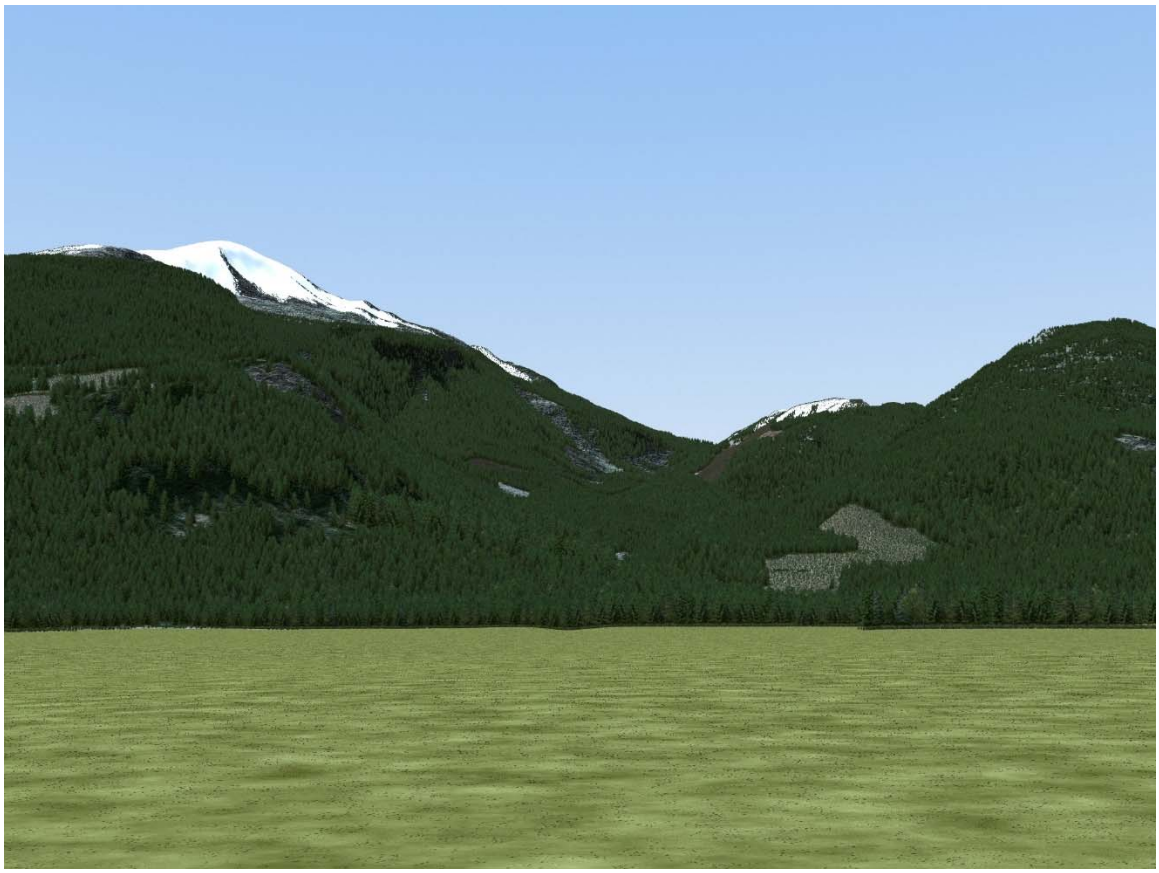
- The blocks have been designed with strategic placement of reserves and retention patches, to provide additional screening and decrease visibility of planned harvesting.
- All blocks are planned to reserve a component of the standing timber within the harvest boundaries, as scattered individual stems and small clusters. These trees, although not represented in the DTMs which have been produced, will serve to decrease block visibility, soften sightlines and contribute to the organic appearance of the blocks.

Visual Assessment Analysis based on the visual simulation models and photographs

VP1 – View 1



Visual Simulation #1: MI100A, C, and D as viewed looking West from viewpoint #1 at VLI polygon #106. This view highlights the portions of existing non greened-up blocks (yellow highlight), portions of planned blocks expected to be visible from VP1(green highlight) and existing Tx line(Purple highlight). Existing Tx disturbance is not considered in the assessment and is not included in the calculations used in determining the extent of the visual impact. Green highlights are the portions of cutblocks expected to be visible from this viewpoint.

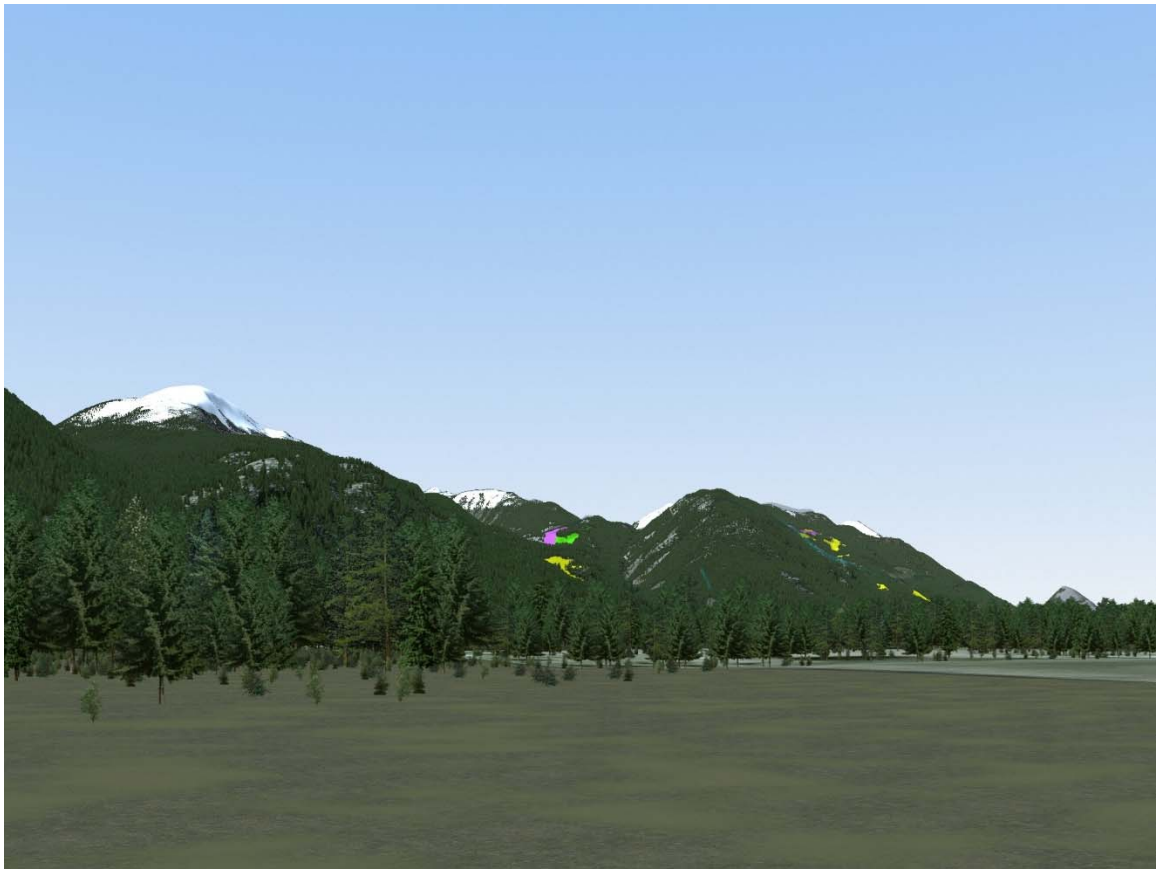


Visual Simulation #2: MI100A, C, and D as viewed looking West from Viewpoint 1 (VP1). The view represents the actual expected post-harvest view. The models do not depict the planned 10sph retention which will be dispersed across the harvest area arranged as small clumps and individual retention trees.

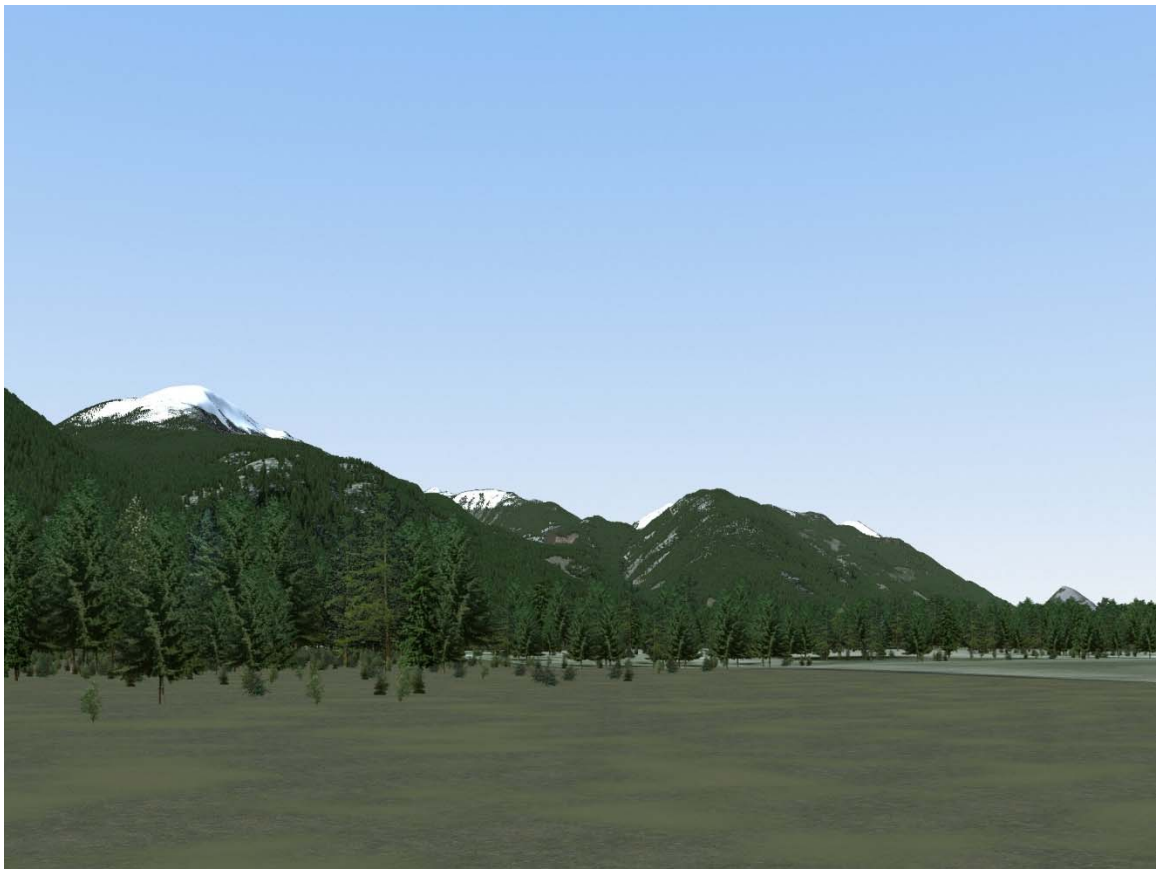
VP 1 Actual View: MI100A, C, and D as viewed looking West from Viewpoint 1 (VP1). The view represents the actual pre-harvest view. This view illustrates that the existing Tx line disturbance is difficult to see and it is expected the actual view of the completed harvest will be less visible than the digital models indicate.

VP 1 Assessment: The visual simulation of the expected view looking West from VP1 illustrates that the post-harvest view of blocks MI100A, C, and D will easily meet the FRPA definition for "Modification" assigned to VLI polygon #106. The blocks will be somewhat easy to see, the visible portion of the blocks will be small to medium in scale, and the visible portions of the blocks will be natural and not rectilinear or geometric in shape. The existing visual landscape is a mosaic of forest types / land cover and the harvested blocks are expected to blend with the existing patterns and further decrease the visual impact.

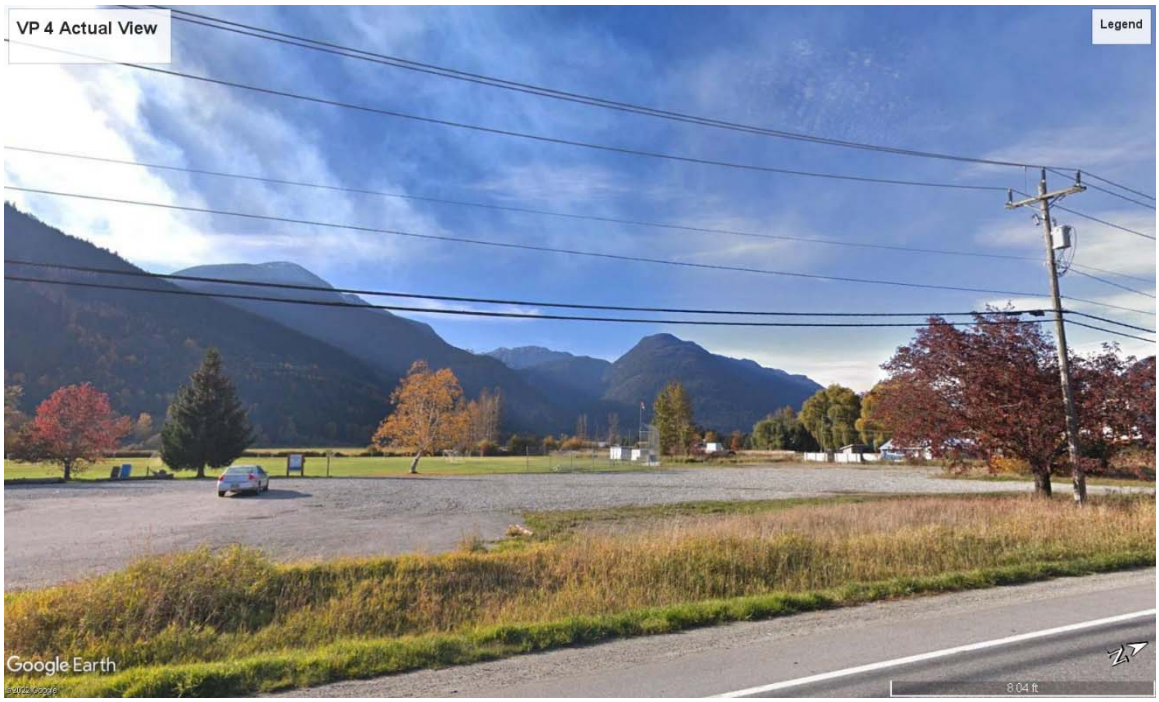
VP4 – View 2



Visual Simulation #3: Block MI100A, C, and D as viewed looking Northwest from viewpoint #4 at VLI polygon #106. This view highlights the portions of existing non greened-up blocks (yellow highlight), portions of planned blocks expected to be visible from VP4(green highlight) and existing Tx line(Purple highlight). Existing Tx disturbance is not considered in the assessment and is not included in the calculations used in determining the extent of the visual impact. Green highlights are the portions of cutblocks expected to be visible from this viewpoint.



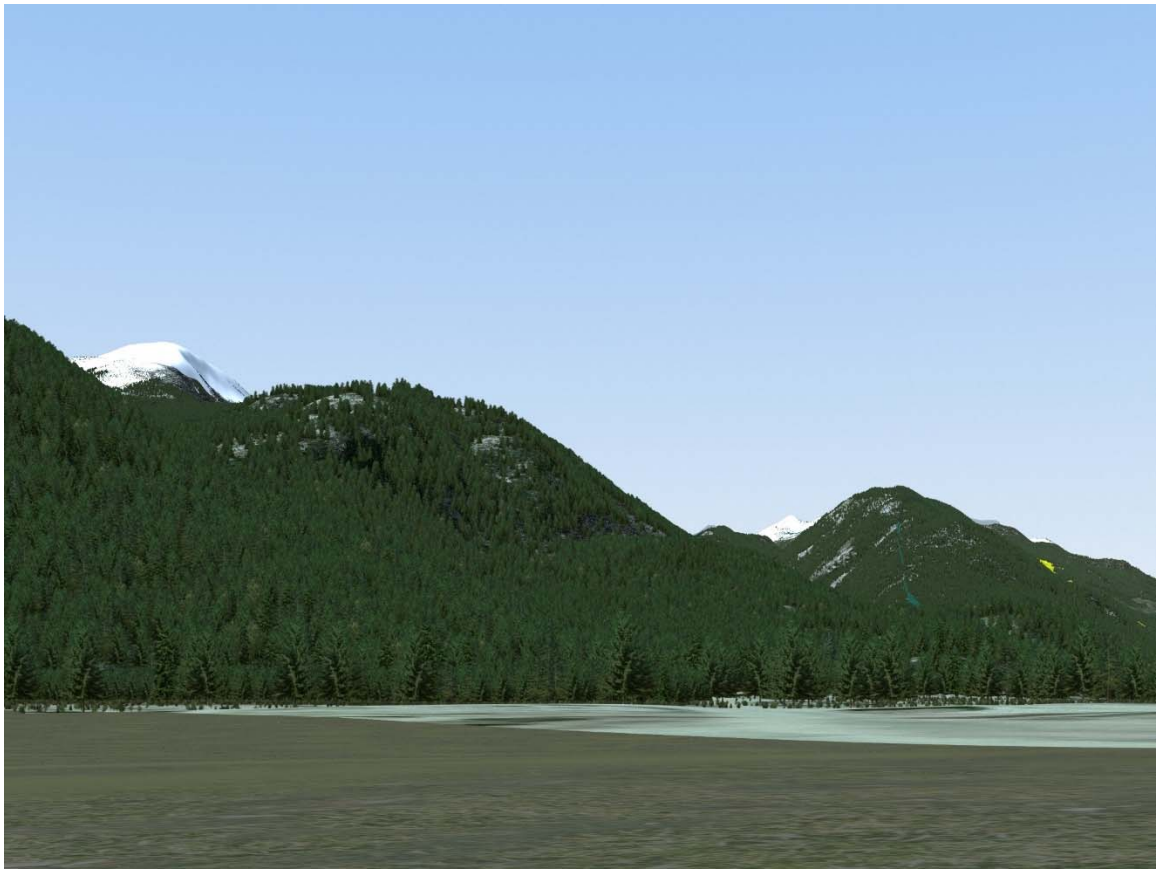
Visual Simulation #4: Blocks MI100A, C and D as viewed looking Northwest from Viewpoint 4 (VP4). The view represents the actual expected post-harvest view. The planned 10sph retention distributed across the harvest areas as individual retention trees and as small clumps are not represented in the model. The planned retention will decrease the overall visibility of the planned harvest.



VP 4 Actual View: MI100A, C, and D as viewed looking Northwest from Viewpoint 4 (VP4). The view represents the actual pre-harvest view. This view illustrates that the existing Tx line disturbance is difficult to see and it is expected the actual view of the completed harvest will be less visible than the digital models indicate.

VP 4 Assessment: The visual simulation of the expected view looking Northwest from VP4 illustrates that the post-harvest view of blocks MI100A, C and D will easily meet the FRPA definition for "Modification" assigned to VLI polygon #106. The blocks will be somewhat easy to see, the visible portion of the blocks will be small to medium in scale, and the visible portions of the blocks will be natural and not rectilinear or geometric in shape. The existing visual landscape is a mosaic of forest types / land cover and the harvested blocks are expected to blend with the existing patterns and further decrease the visual impact.

VP5 – View 3



Visual Simulation #5: Blocks MI100A ,C and D as viewed from VP 5 (Pemberton Valley Lodge). The simulated view indicates that the block will not be visible from this location (surrogate for the Village core area), due to existing topography and block location.

VP 4 Actual View: MI100A, C, and D as viewed looking Northwest from Viewpoint 4 (VP4). The view represents the actual pre-harvest view. This view illustrates the block location will not be visible from the village core area.

Summary of Visual Impact Consistency with FRPA definitions

To summarize, all of the above visual simulation models demonstrate that all blocks assessed in this analysis within visual polygons #151, #157 and #159 are consistent with the FPPR definition of "partial retention" in that they are easy to see, small in size and non-geometric in shape.

Viewpoint / View	Polygon #	Blocks Visible	VQO	Pre-logging analysis post-harvest condition
VP 1 / View 1	106	MI100A MI100D	M M	PR PR
VP 4 / View 2	106	MI100A	M	PR
VP 5 / View 3	106	N/A	M	N/A

Numerical Assessment

A numerical assessment of the percent alteration to the visible landform (total percentage of visual impact to a defined viewscape), has been completed from VP1 and VP4. These VPs were selected as they represent the locations from which the blocks will be most visible.

The numerical assessment was completed using digital mapping in the perspective view. The assessment identified the visible landform (by total number of pixels) and then calculated the number of pixels within the altered visual landscape within the visual landform. The alteration to the visual landscape was calculated as the percent of the visible landform which would be expected to be visually altered by the planned harvest or from existing currently non-greened up cutblocks.

Perspective Viewpoint Analysis #1 and #2, provided in Appendix B, indicate that the percent alteration to the visible landform from blocks both non-greened up and proposed for harvest is:

- VP #1 (VSU polygon 106) = less than 0.1%
- VP #4 (VSU polygon 106) = 1.9%

1. The numerical assessment of percent alteration to the visual landscape was completed for VSU polygon 106 from VP1. The assessment is provided with the perspective viewpoint analysis 1 (Appendix B). The analysis shows that the total percentage of alteration in the VSU, as viewed from VP1 within polygon is less than 0.1%. The alteration in polygon 106 is an alteration that is small in scale. The alteration is within the definition of "retention" which suggests that the criteria for Retention will be met when percent alteration is between 0% and 1.5% alteration. The blocks will easily achieve the Modification objective assigned to the polygon.

2. The numerical assessment of percent alteration to the visual landscape was completed for VSU polygon 106 from VP4 (Appendix B). The assessment is provided with the perspective viewpoint analysis 1 (Appendix B). The analysis shows that the total percentage of alteration in the VSU, as viewed from VP4 within polygon is 1.9%. The alteration in polygon 106 is an alteration that is small in scale. The alteration is within the definition of "retention" which suggests that the criteria for Retention will be met when percent alteration is between 0% and 1.5% alteration. The blocks will easily achieve the Modification objective assigned to the polygon.

Conclusion

The analysis of the visual impact of the blocks from the identified viewpoints suggests that the blocks will be only partially visible and somewhat easy to see from any of the selected viewpoints. The disturbance and alteration to the visual landscape from these blocks will be small in scale and subordinate in the landscape with some natural appearing characteristics, especially when assessed in the overall context of the variable visual landscape such as found in the VSU where harvesting is proposed. Based on the expected amount and type of visual alteration from these proposed blocks it is concluded that the visual impact from these blocks will be consistent with FPPR definition for Modification.

The numerical analysis of the expected alteration of the visible landscape from the viewpoints analyzed suggest that the blocks will be consistent with the alteration levels of a “Partial Retention” landscape (1.6% - 7.0%) as defined by the Visual Impact Assessment Guidebook (January 2001, BC Ministry of Forests) and easily achieve the objectives for Modification

Appendix A: Viewpoint map.

Visual Impact Assessment

Miller Bench - SCF

Legend

- Project Assigned Viewpoints
- Government Assigned Viewpoints
- Visual Sensitivity Unit (VSU)
- Retention
- Proposed Blocks
- NonVEG
- Existing Blocks

Roads

- Highway
- Paved
- Rough
- Proposed

Water

- Lake / River / Ocean
- Stream

Visual Polygon Label Key:

Polygon #
VSC
VAC EVC
VQO

Visual Sensitivty Unit Label Key:

VSU	Visual Sensitivity Unit
VSC	Visual Sensitivity Class
VAC/EVC	Visual Absorption Capacity/Existing Visual Condition
VQO	Visual Quality Objective

Blocks: MI100A, MI100C, MI100D and MI100E

0 0.5 1
Kilometers

Coordinate System: UTM Zone 10
Datum: NAD 83
Scale: 1:40,000
Date: Jul 27, 2022
BCGS Map Reference: 92G062, 92G063

CHARTWELL

Viewpoint Map

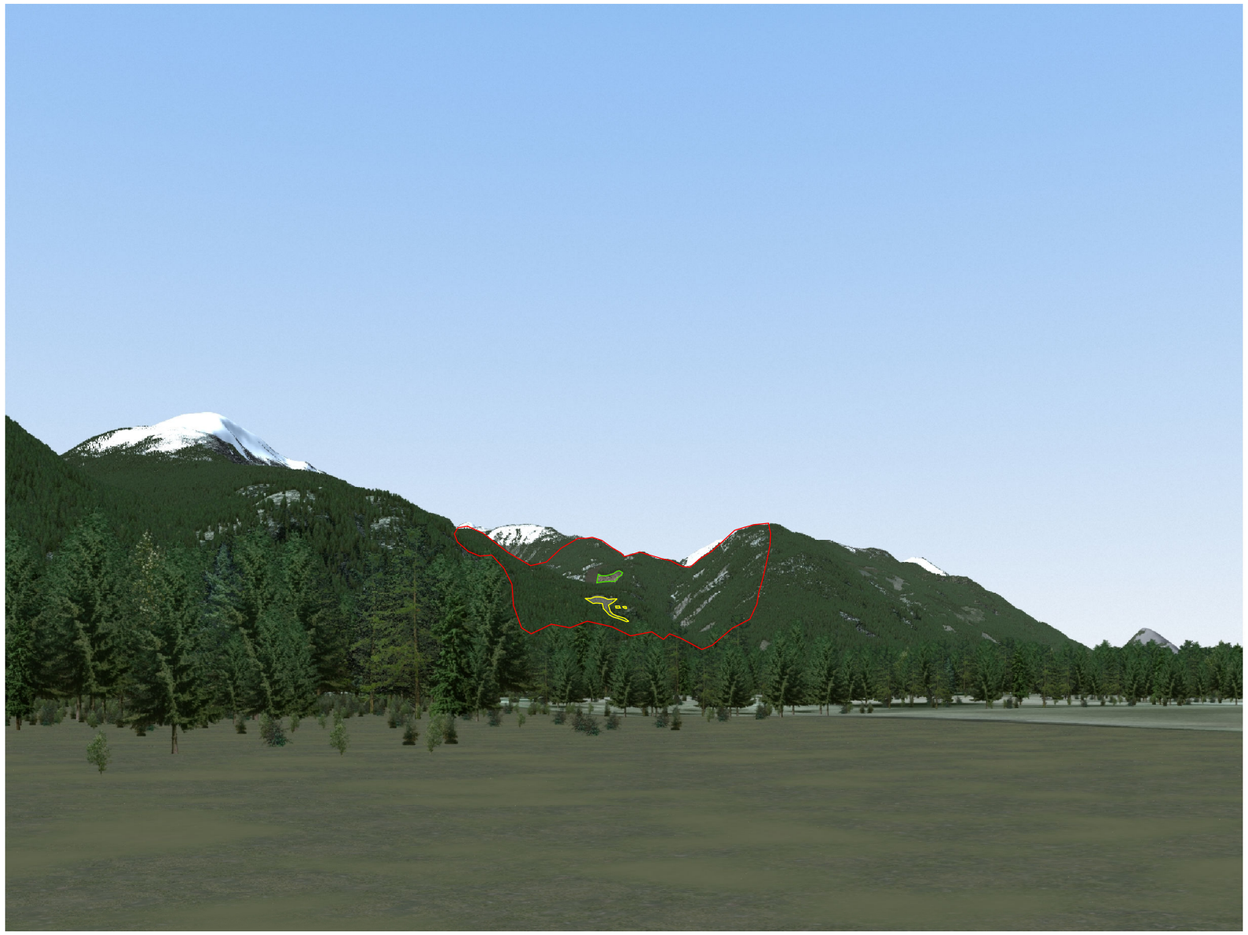
Map Document: (MilerBench MI100 SCF Viewpoint Map)

Appendix B: Perspective Analyses for:
VP1, and VP4

Visual Impact Assessment

Perspective Viewpoint Analysis

Miller Bench



Proposed Blocks: MI100A, MI100C, MI100D, MI100E

Viewpoint No: 4 Old High School

Visual Inventory Legend

VSU #
VSC
VAC / EVC
VQO

VSU - Visual Sensitivity Unit
VAC - Visual Absorbtion Capability
EVC - Existing Visual Condition
VQO - Visual Quality Objective

Percent Alteration Calculation

Area of VSU = 56159
Area of NonVEG Blocks = 664 (1.2%)
Area of Proposed Blocks = 425

Total % Alteration:
(NonVEG + Proposed Blocks) / VSU = 1.9%*

*Units of area measured in pixels

Viewpoint Information

Viewpoint No: 4
Project Assigned
Coordinates: 50.3347° 122.8138°

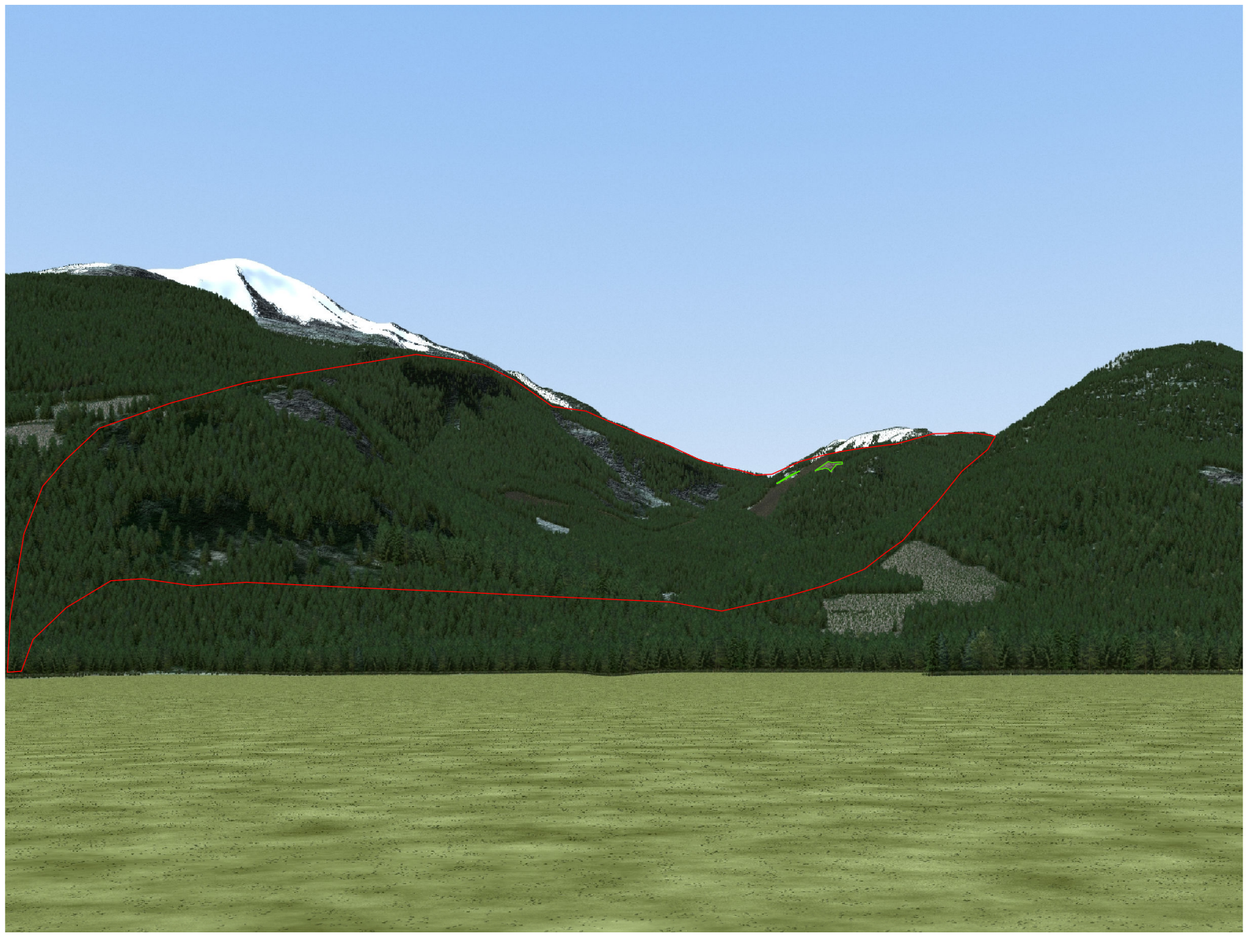
Legend

- Proposed Block
- NonV.E.G.
- VSU

Visual Impact Assessment

Perspective Viewpoint Analysis

Miller Bench



Proposed Blocks: MI100A, MI100C, MI100D, MI100E

Viewpoint No: 1 Miller Cr. Bridge

Visual Inventory Legend

VSU #
VSC
VAC / EVC
VQO

VSU - Visual Sensitivity Unit
VAC - Visual Absorbtion Capability
EVC - Existing Visual Condition
VQO - Visual Quality Objective

Percent Alteration Calculation

Area of VSU = 423380
Area of NonVEG Blocks = 0 (0.0%)
Area of Proposed Blocks = 330

Total % Alteration:
(NonVEG + Proposed Blocks) / VSU = less than 0.1%*

*Units of area measured in pixels

Viewpoint Information

Viewpoint No: 1
Project Assigned
Coordinates: 50.35438° 122.84107°

Legend

- Proposed Block
- NonV.E.G.
- VSU