



FOREST STEWARDSHIP

**Procedures
for
Effectiveness Evaluation
of
Visual Quality Management**

Working Draft

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Visual Quality Effectiveness Evaluation

1.0 Introduction

This document describes recommended procedures for evaluating whether forestry operations are meeting established visual quality objectives in designated scenic areas. The procedures describe how to measure viewing conditions for clearcut, patch-retention and partial cut alterations in mid-distance view, 1 to 8 km from the viewpoint. The procedures are not calibrated to assess foreground views of alterations immediately adjacent to the viewpoint. Alterations located adjacent to a highway, for example, would be assessed on a case by case basis, using professional judgement and recognized design techniques such as the ones described in the Visual Landscape Design Training Manual (1994) rather than the quantitative measurements described in this document.

These procedures are applicable to the majority of current alterations in scenic areas in British Columbia. The procedures may be used at the operational level to monitor individual openings, at the TSA or TFL level to audit particular licensees, or rolled up at the regional or provincial level to give broad indication of recent success in managing and conserving viewsapes.

1.1 Forest and Range Practices Act replaces Forest Practices Code

The Forest and Range Practices Act (FRPA) became law in British Columbia in 2004. FRPA replaces the Forest Practices Code of British Columbia Act (the Code) over a two-year transition period. The transition from the Code to FRPA eases planning requirements, and places greater reliance on the integrity of resource practitioners. Forest practices will be assessed on results, rather than on adherence to prescriptions. The transition from the Code to FRPA does not change existing land use designations, and does not change existing management objectives within designated areas.

The Ministry of Forests, the Ministry of Water, Land and Air Protection, and the Forest Practices Board will evaluate the effectiveness of recent forest management activities. Effectiveness in achieving goals will be evaluated for the eleven resource values listed in FRPA, Section 149. One of the legislated resource values is visual quality.

1.2 Visual Quality

Visual quality is a resource value that is managed in designated scenic areas. All scenic area designations and Visual Quality Objectives (VQOs) that were in effect on September 31, 2003 were grandparented into the new legislative framework and are continued under FRPA, Sections 180-181.

Three types of pre-FRPA scenic area designation exist:

- Scenic areas with Recommended Visual Quality Classes assumed to be current management by district managers.
- Scenic areas with VQOs established by the District Manager under the Code.
- Scenic areas with VQOs designated as part of higher level plans such as Land and Resource Management Plans.

New scenic areas will be established under authority of FRPA, through the Government Actions Regulation. The Minister of Sustainable Resource Management will make future scenic area designations. The Minister of Forests will then establish visual quality objectives within those areas.

1.3 Effectiveness Evaluation

The purposes of effectiveness evaluations (EE) are to:

1. Determine if practices are meeting desired objectives, and
2. Determine if policies and guidelines lead to meeting desired objectives.

An EE is meant to be broad in scope. For efficiency and economy, EEs may be based primarily on ocular estimates rather than field measurements. Ocular estimates are the preferred method for assessing visual quality.

Different people, depending on their background, experience, and occupation, view the same landscape scene differently. Recent research has shown that the positive or negative impressions of each sampled focus group are well correlated. Larger alterations are less preferred, and alterations of similar scale but with visible roads or sidecast are less preferred. Alterations with significant tree retention, and alterations designed to fit well with the landscape, are more preferred across all groups surveyed.

The EE for visual quality seeks to answer the broad question “How well are we managing and conserving views in designated scenic areas?” and also the more specific question “Did recently harvested units achieve the established visual quality objective?” The EE is not intended to answer questions such as “Were the pre-harvest visual impact assessments accurate?” or “Were the planned and approved prescriptions carried out?” Those are compliance and enforcement questions.

The EE evaluator will visit viewpoint(s) to inspect the visual impact of the post-harvest forest alteration. Photographs and site notes will be taken at each viewpoint. The EE evaluator will not visit the harvested unit.

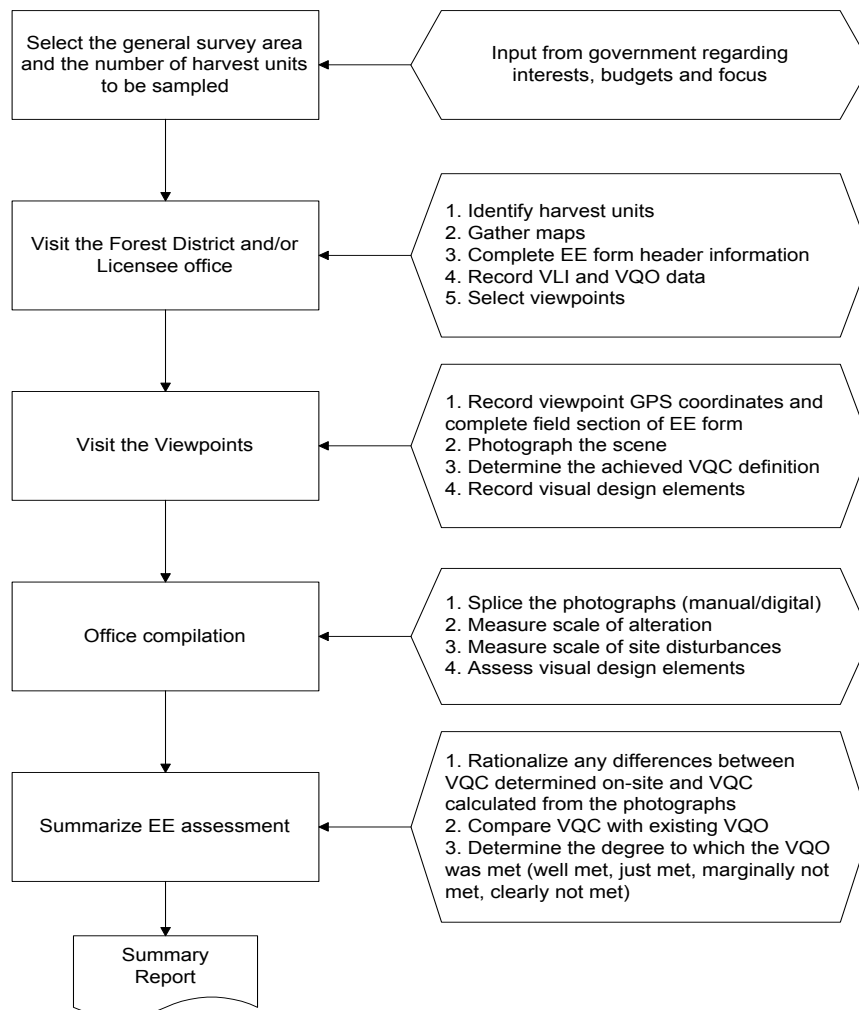
2.0 Visual Quality Effectiveness Evaluation Procedure

The following provides a step-by-step guide to conducting a visual quality effectiveness evaluation. The recommended procedure consists of three physical phases.

1. Visit the Forest District and/or Licensee office,
2. Visit places from which the harvested units may be best viewed, and
3. Compile the findings at the evaluator's place of business.

Figure 1 illustrates the visual quality EE process. The Ministry of Forests or the Forest Practices Board will specify the area to be evaluated and the number of samples to collect, after consultation with key District staff. Effectiveness is generally evaluated at the landscape level and may involve multiple cutblocks, viewpoints and licensees. Examples of evaluation areas would include a long stretch of highway corridor, an entire valley, a lakeshore, or a coastal inlet or channel.

Figure 1. Flowchart of the EE procedure



The evaluation is conducted at all important viewpoints. Existing non-visually greened-up alterations in the subject landscape are considered in the evaluation. Alterations are considered greened-up when the public would perceive them as a regenerating forest, i.e. when the new forest cover is sufficiently tall to obscure stumps, logging debris and bare ground.

The evaluation assesses each view using two independent measures:

1. Meeting the basic visual quality class (VQC) definition, and
2. Meeting the percent perspective landform alteration criteria, incorporating consideration of the quality of visual landscape design.

The final rating combines the two measures. The achieved VQC under the basic definition is compared with the VQC determined using perspective measurement and adjustment for the scene attributes. The final EE rating for each harvested unit is determined by reconciling any differences between the two assessments from each viewpoint in a brief written rationale.

2.1 Office Visit

The evaluation commences with a visit to the Forest District office and/or Licensee office where records for the interest area are maintained. The following materials should be assembled, with preparation by the district or licensee contact before the evaluator's arrival.

2.1.1 Gathering Maps

For each alteration of interest, acquire copies of:

1. the silviculture prescription map (pre-FRPA) or the site plan map available from licensees once they prepare a Forest Stewardship Plan,
2. a topographic map of the landform showing the location of the harvested unit,
3. an area overview map showing highways, waterways, and viewpoints,
4. a copy of the Visual Landscape Inventory (VLI) map for the area at an appropriate scale (typically 1:50,000 or larger).

The VLI map will show the base data considered in the establishment of VQOs. It will also show key viewpoints, screening, and viewing opportunities that a licensee would have considered in planning the alteration.

2.1.2 Completing the EE Form Header

Appendix 1 provides the form to use for Visual Quality Effectiveness Evaluation. One form is completed for each of the viewpoints selected for evaluation. The first section records general information about the alteration(s) selected for evaluation. Identifying information about the alteration (Forest District, licensee, harvest unit coding, etc.) should be filled out at the office.

2.1.3 Recording VLI and VQO data

On the form in Appendix 1 (the “EE form”) determine and record for each alteration:

1. the base VLI data,
2. the update date of the VLI,
3. the established VQO, and
4. the date of VQO establishment.

Confirm the established VQO and date of establishment by checking the source documents, i.e. the VLI database, a District Manager letter, a higher level plan, or the Forest Development Plan or Forest Stewardship Plan in effect. In the absence of established VQOs, record the recommended visual quality class (RVQC) considered current management.

2.1.4 Selecting viewpoints

Following the office visit, the evaluator will travel through the areas of interest to photograph and assess the visual impact of the harvested units. The office visit provides an opportunity to tentatively select the location(s) from which each harvested unit is most visible. The viewpoint(s) may show on the VLI map, or may reflect other view locations that were chosen at the pre-harvest design phase. Key district staff familiar with the areas of interest will recommend additional or better viewpoints if necessary. Examples of viewpoints selected for evaluation (those with significant public use) would include a long stretch of highway leading toward the harvest unit, a rest stop, a recreation site, a settlement, or a tourist-related commercial enterprise.

Visual Impact Assessment (VIA) packages were a pre-harvest requirement for operations in scenic areas with established VQOs since 1995. These documents, accessible from licensees, may assist in selecting critical viewpoints. VIA packages contain maps showing important viewpoint locations. They also show the output from computer or manual simulations of the proposed alteration, overlaid on a perspective view of the landform, from each viewpoint location.

The intent of the visual quality EE assessment is to efficiently obtain an overview answer to the question of whether VQOs are being met in a scenic area. To that end, it is not necessary to select every viewpoint that may be shown on a VLI map or chosen in the VIA package for the pre-harvest design phase. Most alterations are assessed from single, primary and representative key viewpoints.

2.2 Field Visit

Following the assembly of information at the office, the second step of the evaluation procedure is to visit each key viewpoint to observe the alteration. Weather should be clear (90% cloud free), and the scene well illuminated for optimal photography. Illumination is strongest in the summer months. East-facing units are best viewed in the morning, and west-facing units are best viewed in the afternoon. High-use traffic areas on major thoroughfares can be important viewpoints. Evaluators should wear bright safety

vests and use traffic cones when stopped and working along highways. District staff who assisted in information assembly may benefit by attending the viewpoint visit. The following describes the tasks to complete at each viewpoint location.

2.2.1 Completing the field section of the EE form

Using the Visual Quality Effectiveness Evaluation form (Appendix 1), enter data describing the viewpoint location including GPS coordinates and elevation, viewing direction, and distance to the alteration.

The importance of the viewpoint is recorded on the form using a five-point scale. The scale is calibrated to the viewing duration:

- (1) glimpse view, less than 10 seconds,
- (2) sustained side view,
- (3) sustained focal view, travelling toward the alteration for more than one minute,
- (4) viewpoint is at a rest stop, campsite, or other static short-term view location,
- (5) viewpoint is the location of a community, commercial tourist-related enterprise, or other static long-term view location.

Viewpoint importance is used to weight the EE ratings obtained from multiple viewpoints in the event that individual EE ratings differ. Viewpoint importance may also be used to weight the aggregated EE survey results for a complete scenic area or travel corridor.

2.2.2 Photographing the scene

Record the perspective view of the alteration from the viewpoint. High-resolution digital photography (TIFF format), 35 mm print film, or video imaging may be used. Cameras should be mounted on a stable tripod, to ensure the clearest possible image of the landscape. The alteration is photographed to show its setting, the landform on which it is located, using an equivalent to 50 mm lens. This may necessitate a series of overlapping photographs (25% overlap minimum) to capture the entire scene. The photographs will be spliced together to provide a broad panorama. The alteration should also be photographed at a zoomed-in scale to show any within-block visual influences such as roads, tree retention and feathered edges.

2.2.3 Assessing the Basic VQC definition

The evaluator will use the written definitions of visual quality classes (Table 1) to determine the visual quality class achieved on the landform, and refine the determination as being toward the low, mid or upper range for the class. For example, if an alteration is rated as PR, is it closer to R, or M, or somewhere in between? Circle the location along the scale line on the form that best represents what is seen. Record on the form aspects of the scale and/or design of the alteration and its surroundings that caused it to meet the low or high end of a particular VQC. Other existing non-green alterations on the landform must be considered in the evaluation.

Table 1. Definition of Visual Quality Classes

Visual Quality Class	Symbol	Basic Definition
Preservation	P	"preservation" means an alteration of a forest landscape resulting from the presence of cutblocks or roads, such that when assessed from a viewpoint that is representative of significant public viewing opportunities, the alteration is (a) very small in scale, and (b) designed to be indistinguishable from the pre-harvest landscape;
Retention	R	"retention" means an alteration of a forest landscape resulting from the presence of cutblocks or roads, such that when assessed from a viewpoint that is representative of significant public viewing opportunities, the alteration (a) is difficult to see, (b) is small in scale, and (c) has a design that mimics natural occurrences;
Partial Retention	PR	"partial retention" means an alteration of a forest landscape resulting from the presence of cutblocks or roads, such that, when assessed from a viewpoint that is representative of significant public viewing opportunities, the alteration (a) is easy to see, (b) is small to moderate in scale, and (c) has a design that appears natural and is not angular or geometric;
Modification	M	"modification" means an alteration of a forest landscape resulting from the presence of cutblocks or roads, such that, when assessed from a viewpoint that is representative of significant public viewing opportunities, the alteration is very easy to see and is either (a) large in scale with a design that is natural in its appearance, or (b) small to moderate in scale but with a design that has some angular characteristics;
Maximum Modification	MM	"maximum modification" means an alteration of a forest landscape resulting from the presence of cutblocks or roads, such that, when assessed from a viewpoint that is representative of significant public viewing opportunities, the alteration is extremely easy to see and one or both of the following apply: (a) the alteration is very large in scale; (b) the alteration is angular and geometric;

2.2.4 Assessing Visual Design

The viewpoint visit provides an opportunity to assess the visual design of the alteration. Using a description of key design concepts and principles (see the Visual Landscape Design Training Manual, 1994, pages 49 – 63, and the Visual Impact Assessment Guidebook, 2001) answer the following questions by providing a Good, Moderate, or Poor rating on the EE form:

1. **Does the alteration respond to the major lines of force?** Opening boundaries should respond to topography by pushing up in hollows and dropping down on ridges. Lines of force would be rated Good if there is a strong response, and Poor if there is little or no response. If visual force lines are not apparent on the landform (i.e. due to lack of undulation or undulation being obscured by residual trees) the rating would be neutral, or Moderate.
2. **Does the alteration borrow from the natural character of the landscape?** Does the shape of the alteration reflect the quality of shapes found in the natural landscape (rounded curvilinear shapes on rounded landforms; spikey more jagged shapes in more rugged terrain) and does the opening respond to natural vegetation patterns and openings in both in scale and shape?
3. **Have edge treatments been incorporated?** Edge treatments include two aspects – feathering to soften the transition between the alteration and the unaltered forest, and the use of irregular or wavy boundaries. If both aspects are present the rating is Good, if one aspect is present the rating is Moderate, and if neither aspect is present the rating is Poor.
4. **How far is the alteration from the viewpoint?** The distance from the viewpoint can significantly influence public perception of an opening. Foreground openings are difficult to integrate because all the detail is visible. Distant openings are much easier to integrate because less detail is visible. The distance factor is rated Poor if less than 2 km, Moderate if from 2 to 5 km, and Good if over 5 km distant.
5. **What position does the alteration occupy on the landform?** If an opening occupies the center of a landscape in direct view it would rate Poor for position. Openings located lower down and to one side of a landform are more comfortable and are rated higher.

Each design component is assigned a score of –1 if Good, 0 if Moderate, or +1 if Poor. The sum of the five components is entered in section 2.3.3(e) on the EE form.

2.3 Office Compilation of Results

Following the viewpoint visit, photographs of the alteration, in its landscape context, are measured to confirm the decision about the VQC achieved using the Basic definitions.

2.3.1 Confirming Visual Design

The five components of the design of the alteration were assessed during the viewpoint visit. Adjustments to the initial ratings may be done in the office using the spliced photomontage and zoomed-in photographs.

2.3.2 Assessing the Initial VQC Rating

The Initial VQC rating is assessed by measuring the scale of alteration on the landform and comparing the result with the percent alteration ranges in Table 2.

Step 1: Percent alteration measurement

The scale of alteration is expressed as the percentage of the visual unit or the landform occupied by the alteration(s) as assessed in perspective view from the viewpoint using the photographs. Portions of the landscape screened by vegetation, and natural non-green areas such as mountaintops and rock outcrops, are excluded from the landform measurement. Other existing alterations on the landform without visually effective green-up are measured and added to the subject alteration percentage in assessing the overall visual condition of the view. See Appendix 4 for the methodology for measuring and calculating percent alteration. Measurements are also made of the extent of site disturbance (roads, landings, sidecast, and mass wasting) outside the alteration.

Measurements are made using prints (at least 8x10s) of the photography. The digital photographs or the prints may need to be spliced together to capture the entire scene from each individual viewpoint. A computer GIS system or a planimeter (manual method) is then used to determine the scale of the alteration within the landscape, and the scale of site disturbance and tree retention. Use of a digital planimeter, or computer-GIS functionality, is the preferred method for calculating the scale of alteration. Manual dot grid estimates are not accurate enough for effectiveness evaluation.

There are three vegetation components in an alteration in perspective view: the green forest canopy, tree trunks, and bare ground. The current definition of “altered area” only considers bare ground. Exposed tree trunks are excluded from the alteration measurement.

The measurements from the photographs are entered on the EE form in section 2.3.2:

- a.) Percent of the landform altered by recent and any older openings without visually effective green-up in place.
- b.) Percent of the landform outside the alteration in visible access roads.

The percentages are added and used in Step 2 below to determine an Initial VQC rating.

Step 2: Comparing Alteration Percent with Table 2

Table 2 lists the scale of alteration that generally achieves the specified VQC according to past experience and visual quality studies done in the province of British Columbia. Compare the percent alteration obtained in Step 1 above with the numbers in Table 2 and enter the resulting “Initial VQC” on the EE form.

Table 2. Percent alteration ranges for Visual Quality Classes.

Visual Quality Class	Alteration percent of landform in perspective view
P - Preservation	0
R - Retention	0 – 1.5
PR - Partial Retention	1.6 – 7.0
M - Modification	7.1 – 18.0
MM - Maximum Modification	18.1 – 30.0

2.3.3 Assessing the Adjusted VQC Rating

The numbers in Table 2 provide average results from public perception studies and do not explicitly account for site disturbance, tree retention, or design features. These other attributes of the scene also contribute to the overall visual impact, either negatively or positively. Negative visual influences include visible roads and sidecast. Positive visual influences include good design and tree retention. For example, if an alteration has good design, and tree retention of upwards of 25%, it can occupy up to 10 to 11% of a landform and still achieve PR in a public perception survey. If an alteration has visible roads, landings, sidecast, and/or mass wasting, it may occupy only 4 to 5% of the landform but still be rated M by the public.

The “Adjusted VQC” calculated on the EE form accounts for these influences. The initial percent alteration figure measured on the photographs is adjusted upward and downward, depending on the degree of positive and negative visual influences. Three aspects of the visual scene are assessed on a qualitative scale, and assigned points (the “Adjustment Factors”) according to the following method:

c.) Account for roads, landings, and site disturbance within opening:

	<u>Adjustment Factor</u>
If no roads or sidecast are visible	0
If roads or sidecast are visible but subordinate in the scene	+1
If roads or sidecast are significantly visible, but small in scale	+2.
If roads or sidecast dominate the scene	+3.

d.) Account for tree retention:

	<u>Adjustment Factor</u>
Less than 15% tree retention (rated Poor)	0
Tree retention levels between 15% to 22% (rated Moderate)	-1
Greater than 22% tree retention (rated Good)	-2

e.) Account for design:

Five components of Design were rated in section 2.2.4 and assigned a score of -1 points for Good, 0 points for Moderate and +1 point for Poor. The sum of these scores is used as the Adjustment Factor for Design.

Negative adjustment factors reduce and positive factors increase the percent alteration impact measured from the photographs. The “Adj. Factors” on the form are summed to derive a total adjustment point score. This sum is referred to as “Y” on the form, and the percent alteration measured from the photographs (section 2.3.2) is referred to as “X”. The two are combined in the formula: $X \cdot (1 + 0.14 \cdot Y)$ to determine an “adjusted” percent alteration figure. This number is compared with the average percent alteration values in Table 2 to indicate the Adjusted VQC.

The purpose of the formula is to include the adjustment and scale it across the range of alteration percents. The adjustment factors are calibrated to adjust correctly, according to recent studies, for site disturbance, tree retention and visual design influences at an alteration level of approximately 7% of the landform (the transition between Partial Retention and Modification VQCs in Table 2). The formula uses the number 0.14, the reciprocal of 7, to increase the adjustment at higher alteration levels and decrease the adjustment at lesser levels of alteration.

The Adjusted VQC is recorded by circling on the VQC scale line (in section 2.3.3 of the form) the location of the adjusted percent alteration value resulting from the formula. The result, lying in the P-R-PR-M-MM range, will usually be close to that determined using the Basic VQC definition in section 2.2.3.

2.3.4 Procedures for partial cut alterations

Partial cut alterations are those with a distributed residual forest canopy that has lesser density than the unaltered forest. The visual impact of the alteration is dependent on the amount of volume or number of trees retained on site, the size of residual tree crowns, and the height of the residual trees. The procedure for evaluation of partial cut alterations is similar to that used for clearcut or variable retention alterations.

Partial cut alterations may be assessed for their Basic VQC using the written definitions (Table 1). The evaluator’s visual impression is recorded on the scale line in section 2.2.3 of the form, as per standard procedure.

The Adjusted VQC is determined using a two-step “visual equivalent to clearcut” procedure.

Step 1: Determine visual percent volume removal

The evaluator will use a set of calibrated colour photographs (Appendix 3) to make an ocular estimate of the percentage of volume that was removed during harvesting. This estimate will sometimes vary from the data in a post-harvest timber cruise, due to the visual effects of slope, canopy conditions, species and other factors. Texture and permeability of the residual canopy are compared with the photographs to provide a visual percent volume removal estimate, to the nearest 10%. Estimated residual tree height, to the nearest 5 m, is also recorded on the EE form.

Step 2: Determine the “visual equivalent to clearcut” percent alteration number

Table 3 provides a grid of percent alteration numbers that are based on research regarding the likelihood of achieving a target VQO using a partial retention harvesting system. The table represents a 50% confidence level that the alteration will be visually equivalent to a clearcut with the specified level of alteration. The shading in Table 3 highlights VQC classes, with the darkest shade representing expected achievement of R, the mid-shade representing achievement of PR, and the unshaded portion achieving M.

Using estimated percent volume removed and residual tree height from Step 1, the evaluator will determine from Table 3 the “visual equivalent to clearcut” percent alteration value for the partial cut alteration. At very low retention levels (<15%) consideration must also be given to the scale of the alteration. The value determined from Table 3 is entered on the EE form, and then adjusted using the factors described in section 2.3.3. The resulting Adjusted VQC is recorded using the numeric position on the scale line, as per the procedure for clearcut alterations.

Table 3. Visual equivalent to clearcut percent alteration factors for partial cut alterations.

		Mean height (m) of residual trees									
		5	10	15	20	25	30	35	40	45	50
Volume removed (%)	10	0.1	0.1	0.1	0.2	0.2	0.3	0.4	0.6	0.8	1.1
	20	0.1	0.1	0.2	0.3	0.5	0.7	0.8	1.1	2.0	2.6
	30	0.2	0.2	0.3	0.5	0.7	1.0	1.2	1.6	3.2	4.0
	40	0.3	0.4	0.6	0.9	1.5	2.4	2.8	3.2	4.5	5.3
	50	0.4	0.5	0.9	1.3	2.6	3.8	4.4	5.0	5.8	6.5
	60	1.0	1.2	1.6	2.2	3.3	4.4	5.2	6.0	6.9	7.8
	70	1.5	1.6	2.3	3.0	4.0	5.0	6.0	7.0	8.0	9.0
	80	3.0	3.3	4.1	4.8	5.7	7.0	7.5	8.5	9.5	10.5
	90	4.5	5.0	5.8	6.5	7.3	8.0	9.0	10.0	11.0	12.0

2.3.5 Determining the EE rating for the landform

Compare the Basic VQC determined using the VQC definitions with the Adjusted VQC derived using percent alteration measurements and adjustment factors. The two evaluation methods will usually result in similar ratings, although they may lie on either side of a class boundary.

The effectiveness of achieving the visual quality objective for the subject landform can then be determined. On a five-point scale, the effectiveness ratings are:

- 5 = well met,
- 4 = met,
- 3 = borderline,
- 2 = not met,
- 1 = clearly not met.

If both evaluation methods indicate achievement of the visual quality objective, the EE rating is 5 if in the middle to lower end of the alteration range for the class and 4 if one or both methods score in the upper end of the range for the class. If results using the two methods straddle a class boundary (i.e. one method achieves the high end of PR, the other the low end of M) then the EE rating for a landform with a PR objective would be 3, borderline. If both methods indicate non-achievement, the EE rating is 2 or 1, dependant on how far outside the objective class that the percent alteration is rated.

2.3.6 Allowance for over-ride

In cases of significant conflict between results from the two evaluation methods, the Basic VQC is considered more important. For example, an alteration that occupies only 4% to 5% of a landform (mid PR Initial VQC) may be so angular/geometric that it is rated high M or even MM for the Basic VQC. In this case, with a visual quality objective of PR, the objective was clearly not met. However, the ratings straddle a class boundary and the procedures would indicate “borderline”. The final section of the EE form allows the evaluator to over-ride the EE rating determined by the procedures, if necessary, and provide a rationale for having done so.

3.0 Summarizing the EE ratings for the Scenic Area

Section 2 described procedures for assessing the degree to which visual quality objectives have been met on a specific landform and from individual viewpoints. Alterations that have been assessed from multiple viewpoints are reconciled, using viewpoint importance, to derive an overall EE rating for each landform. Once this is done, and each landform in a scenic area has been individually rated, the final step in the EE process is to aggregate results across a district, or within a TSA or TFL.

The Ministry of Forests and the Forest Practices Board have collaborated in developing these procedures. The procedures have been tested and refined using photographs of recent alterations. The procedures were further refined in a field test. The next step is to

conduct a pilot project that evaluates a complete scenic area. The pilot project will include tests of alternative aggregation methods, further calibration of the percent alteration adjustment factors, and refinement of Table 3.

Current proposals for methods to aggregate EE results for a scenic area include the following:

- Take a simple average of EE scores across all landforms
- Weight the average by the area of each landform in plan view
- Weight the average by the area of each landform in perspective view
- Weight the average by viewpoint significance

Alternatively, or additionally, an aggregate EE score may be described as a percentage of samples that meet the objectives for the scenic area. The summary report for a scenic area may also summarize specific attributes recorded on the form, to explain reasons for achievement or non-achievement of the objectives.

4.0 Discussion

The procedures described in this document have two components. The first component uses the definitions of visual quality classes (Table 1) to determine a Basic VQC. The second component uses measurement and adjustment to confirm or modify the Basic VQC. Where the two components result in different conclusions, the Basic VQC is the primary conclusion.

The assessment of design elements (section 2.2.4) considers five primary attributes. Other design elements include factors such as the visibility of tree boles, texture and colour contrast, and the presence of water bodies. These issues are largely addressed by the inclusion of “distance from the viewpoint” as a modifying attribute.

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