

	MoTI Provincial Quality Plan Pavement Marking Services	Effective Date: May 2013
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1. Background

Under the Agreement, contractors have the responsibility for ensuring quality of the Services. The Contractor's Quality Plan describes how the services are delivered to meet the contract requirements. The contractor is required to retain Quality Records to demonstrate conformance with the Agreement.

The Ministry is responsible for Monitoring and conducting audits of the contractor's work and processes to ensure conformance with the Agreement. In addition, a Ministry Representative will verify that the quantity of line kilometers outlined in the Agreement are painted each season, confirm the milestone dates are met, issue non-conformance reports and ensure proper records are kept.

2. Purpose

The purpose of the Provincial Quality Plan is:

- To confirm products and services delivered by the contractor conform to conditions of the Agreement;
- To ensure effectiveness of the Contractor's Quality Plan; and
- To ensure consistency in the frequency, methods, and application of audits.

3. Definitions

Agreement: the Pavement Marking Service Agreement – Round 3.

Field Audit: examination and measurement of the pavement markings to determine conformance with the Pavement Marking Specifications and/or observation of the services to determine conformance with the Agreement.

Ministry: the Ministry of Transportation & Infrastructure.

Ministry Representative: the person designated as such by the Ministry.

Monitoring: observation of the services (in progress or completed) to determine conformance with the Agreement.

Non-conformance: The contractor's failure to comply with one of the contractual obligations.

Non-conformance Report (NCR): means those reports issued in writing by either the Ministry Representative or the contractor that document the contractor's failure to comply with the terms of the Agreement and fulfill the contractor's obligations under the Agreement.

Audit of Documentation: a process for obtaining audit evidence and evaluating it objectively to determine the extent to which contractual requirements are met.

Pavement Marking Specifications: specifications in Schedule 1 (Pavement Marking Specifications) of the Agreement, as may be amended by the Province from time to time by written notice to the contractor.

Quality Records: records and/or data that indicate the level of conformance to the Pavement Marking Specifications and Agreement.

4. Responsibilities

Contractor: is responsible for delivery of the products and services as outlined in the Agreement. This includes preparing and operating within an accepted Contractor Quality Plan.

Ministry Representative: is responsible for implementing the Provincial Quality Plan.

5. Monitoring and Auditing

Contractor performance and areas of concern will govern the frequency, timing and location of audits; increasing by up to 50% if there are emerging areas of concern.

5.1 Monitoring

Monitoring is the ongoing observation of the delivery of the Pavement Marking Services by Ministry staff. Monitoring can consist of windshield assessments and/or observations of completed work or work in progress.

Monitoring activities should be documented with both positive and negative observations recorded. A Monitoring report template can be found in Appendix A.

5.2 Audit Frequencies

Audit Type	Seasonal Total
Field Audits	12
Audits of Documentation	18

5.3 Field Audits

Field Audits are conducted by the Ministry Representative to verify product conformance with the Agreement. The Ministry will test a random sampling of the pavement markings painted by the contractor each season. A minimum of 12 Field Audits will be conducted per season per Service Area.

Each Field Audit will be comprised of the tests outlined in Article 16.2(b) of the Agreement. Refer to Appendix B for the Field Audit report. Note there are sections of highway in the Vancouver Island and Lower Mainland service areas where high traffic volumes may pose a threat to safety. On these sections the Ministry Representative may rely on the contractor's data to verify reflectivity.

5.3.1 Reflectometer

When there is a discrepancy between the contractor's and the Ministry's reflectivity readings on any given test site the contractor and the Ministry Representative will jointly record readings of their reflectometers on 20 measurements at 5 meter intervals to establish the mean between the two machines. Note each of the reflectometers must record a reading on the exact same location throughout the 20 measurements.

All measurements of reflectivity will be compared against the resulting mean (average) between the two machines. The mean will be used to determine the readings for the test(s) in question.

5.4 Audits of Documentation

Audits of Documentation are conducted by the Ministry Representative to verify product conformance with the Pavement Marking Agreement. A minimum of 18 audits will be conducted per season per Service Area. At least 9 of the 18 audits will be of the Digital Pavement Marking Measuring Instrument (DPMMI) Reports. Refer to Appendix C for a sample Audits of Documentation report.

A typical Audit of Documentation will consist of a review of all the Contractor's documentation and/ or information applicable to a particular day or area of production.

Audits of Documentation may be conducted on the following:

- Digital Pavement Marking Measuring Instrument (DPMMI) Reports. The Ministry Representative will:
 - Average the data starting with the first reading after 5 minutes of production has elapsed whenever possible (this equates to approx. 1.25 km).
 - Average readings spanning half hour blocks to determine conformance with the specified wet mil thickness (this equates to approx. 7.5 km).
 - Note that the data should be reviewed and if unusual readings (eg. 0 or 500) are found they are to be excluded when calculating the averages.
 - Ensure the average of the readings meet the specification at a minimum or will constitute a Non-conformance.
- calibration of the contractor's measuring instruments such as the DPMMI and reflectometer.
- the contractor's QC/QA or continual improvement process (e.g., follow up to non-conformances, effectiveness of corrective actions).
- confirming products used are on the recognized products lists.

Note that, depending on the information being reviewed, Audits of Documentation may be conducted either at the Ministry Representative's office or with the Contractor at their office.

Failure to meet the requirements of any of the monitoring or audit conducted constitutes failure of that audit in whole and the product measured will be considered a Non-conformance.

6. Non Conformance Report (NCR)

A sample Non-conformance report can be found in Appendix D.

6.1 Deficiencies

Where deficiencies are noted through monitoring or auditing the Ministry Representative is to ensure sufficient information is gathered to allow a NCR to be raised if necessary. If the deficiencies pose a safety risk to the public, the Ministry Representative will record observations and immediately notify the contractor to undertake works to make the highway safe. Where an immediate correction is carried out at the time the deficiency is identified, the original deficiency will still be recorded. If a deficiency on site is not resolved to the satisfaction of the Ministry Representative an NCR may be raised.

Deficiencies recorded do not necessarily indicate a problem to the Ministry if appropriate actions were taken. If modifications to product or work procedures (or both) have taken place, with proper documentation, it proves a functioning system. However, evidence showing a deficiency without appropriate actions may result in an NCR.

6.2 Description of Non-Conformance Report

Every NCR must reference the applicable provision (Agreement section number, specification section number, etc.) that has not been adhered to. If an NCR is issued by the Ministry it is still the contractor's responsibility to determine the extent of the deficiency.

6.3 Review and Response

Both pages of the NCR will be issued to the recipient for review and response. Dialogue is important for both parties to fully understand the situation from all perspectives, and to determine a reasonable date by which any Required Correction or Corrective Action Plan will be required.

6.4 Required Correction

A required correction is not to be confused with a corrective action plan (see 6.5 below). Required correction indicates whether there are actions necessary to bring material, product or service into conformance, or if the material, product or service is acceptable as is. When a deficiency is uncovered by the Ministry, it is the contractor's responsibility to determine the extent, location and quantity of non-conforming material, product or service. The timeframe for any correction is outlined by the Ministry. It is important to determine a reasonable date the correction is required by. This date is heavily dependent on the urgency of the situation.

When the Required Correction has been fulfilled to the satisfaction of the Ministry Representative, Section 3 of the NCR is to be signed off as accepted.

6.5 Corrective Action Plan

Whereas a required correction outlines how to fix a particular problem, a corrective action plan outlines how to prevent it from recurring. Corrective action plans tie to the answer of *why* the problem occurred.

If the Ministry Representative uncovers a deficiency, it is the contractor's responsibility to determine the extent, location and quantity of non-conforming material, product or service. The corrective action plan must outline changes made to processes or activities to ensure the deficiency does not recur.

7. Verifying Quantities

The Ministry Representative will ensure the Line Kilometres painted annually by the Contractor equals the total quantity of Line Kilometres to be painted annually, as identified in Schedule 4 (Routine and Quantified Pavement Marking Services). Note that this schedule is updated each year to reflect changes to line inventory and/or changes to services.

Any discrepancies from the quantities for both routine and quantified must be documented. In addition, Schedule 6 (Milestone Dates and Consideration Charges) should be reviewed for the application of consideration charges.

8. Milestone Dates

The Ministry Representative will ensure that the milestone dates outlined in Schedule 6 (Milestone Dates and Consideration Charges) are met each year. The Ministry Representative will document such verification by noting the date each milestone date is completed.

Contractors may request an extension of the milestone dates in accordance with Schedule 6 (Milestone Dates and Consideration Charges), Part 2 section 6 of the Agreement. To ensure consistency in granting such extensions, the Ministry Representative will follow these guidelines:

- The final decision on whether to grant an extension to the milestone dates will be made by the Regional Manager, Operations and Maintenance.
- Requests by the contractor for an extension must be submitted in writing to the Ministry Representative and clearly state the cause of the delay (i.e. strike, lockout or other labour dispute; abnormal weather conditions; or other event beyond the control of the contractor). The contractor must clearly demonstrate how their operations were affected.

The Ministry Representative will document all failures to meet the milestone dates and responses to the request for extensions.

8.1 Abnormal Weather

The Agreement defines abnormal weather conditions as 'a weather condition which, in any two-week period, differs from the statistical average for that condition in that period by more than one standard deviation, calculated based on relevant data covering the 20 year period immediately preceding the Commencement Date as available from Environment Canada'.

The Ministry Representative will retrieve data from the Environment Canada website at <http://weather.gc.ca/> for the 20 year period immediately preceding the contract commencement date. The Ministry Representative will also retrieve the information for the two week period the contractor has identified as having abnormal weather conditions. When retrieving data from the website the Ministry Representative will search either by 'Station Name' or 'Proximity' to obtain data closest to the section of pavement marking services not completed.

9. Records

All Monitoring, Field Audit, and Audit of Documentation reports, verification of quantities and milestone dates and documentation related to extensions are to be retained in a central filing system by the Ministry Representative.

Appendix A
MONITORING REPORT SAMPLE

Record #	Current Date	Current Time	Current Weather Conditions	Location (eg. Hwy #, direction of travel)	Description of Line (eg. tangent, inside/outside curve)	Type of Pavement Surface	Repaint or New Line?	Date Line Painted	Paint Type	Required Wet mil Application	Observations (eg. signs of wear, alignment, width, colour, contractor's traffic control)	Observations of Bead Coverage	Photo Reference Name
1													
2													
3													
4													
5													

Appendix B
FIELD AUDIT REPORT SAMPLE

Part 1 - AUDIT DETAILS

Service Area Name: _____

Name of Contractor: _____

Audit Date: [Click here to enter a date.](#)

Date Discussed with Contractor: [Click here to enter a date.](#)

Auditor Name

Auditor Signature

Test # (LKI Contract-Segment-Sequence) and
Calibration #: _____

Reflectometer Calibration Date: _____

Report Date: _____

Time: _____

Temperature _____

Weather: _____

Line Type: _____

Direction: _____

Paint Thickness _____

Type/Colour of Paint: _____

Reference mark made on road? _____

Location: _____

Pavement Condition: _____

Part 2 - AUDIT RESULTS

Dimensions:

Width: Pass / Fail
(select one)

Pass or Fail

Spacing: _____
Parallel _____
Retrace: _____
Alignment: _____
Daytime Visibility: _____
Colour and Retention: _____

Reflectivity:

Calibration #	Reading
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	

Average Reading: _____

Pass/Fail: _____

Appendix C
AUDIT OF DOCUMENTATION REPORT

SECTION 1: AUDIT DETAILS

Audit Report #: _____

Service Area Name:

Name of Contractor:

Audit Date: [Click here to enter a date.](#)

Date Discussed with Contractor: [Click here to enter a date.](#)

Auditor: _____

Auditor Signature

Attendee Register: (if applicable)

Name

Position

Topic of Audit:

Overall Summary of Findings:

Attachments (e.g. photos, monitoring records, public complaints, etc.):

SECTION 2: QUESTIONS/ FINDINGS/ EVIDENCE – RECORDS REVIEWED

Question 1:

What is being assessed:

Findings:

Evidence-Records Reviewed:

Question 2:

What is being assessed:

Findings:

Evidence-Records Reviewed:

Question 3:

What is being assessed:

Findings:

Evidence-Records Reviewed:

SECTION 3: ACTIONS TO BE COMPLETED / RE-DONE

Describe all actions to be completed and/or re-done by the contractor

Date accepted by MOT: [Click here to enter a date.](#)

Initials: _____

SECTION 4: NCR/OFI ISSUED

Appendix D

NON-CONFORMANCE REPORT

PART 1 – Completed by Ministry Representative

SECTION 1: NCR TRACKING

DATE: _____ PREPARED BY: _____

SERVICE AREA NAME: _____

CONTRACTOR NAME: _____

NCR #: _____

SECTION 2: DESCRIPTION OF NON-CONFORMANCE

Quote the contractual requirement which is not being met and/or the relevant section of the Contractor's QP. Also quote location of non-conformance, i.e., highway number, crew when applicable.

SECTION 3: REQUIRED CORRECTION

Does the Contractor have to re-do/do the work? Select N/A if non-conformance is not curable or opportunity to rectify has passed.

YES _____ DEADLINE FOR CORRECTION: _____

NO _____ MOTI ACCEPTS THE NON-CONFORMING PRODUCT/SERVICE

REASON FOR ACCEPTANCE: _____

N/A _____ REASON: _____

SIGNATURES (UPON COMPLETION OF REQUIRED CORRECTION):

CONTRACTOR REPRESENTATIVE CONFIRMS THAT THE CORRECTION HAS BEEN COMPLETED

NAME _____ SIGNATURE _____ DATE _____

MOTI REPRESENTATIVE ACCEPTS THE CORRECTION

NAME _____ SIGNATURE _____ DATE _____

Original = Region; Copy = Contractor

PART 2 – Completed by Contractor

SECTION 4: ROOT CAUSE ANALYSIS AND CORRECTIVE ACTION PLAN

DEADLINE FOR SUBMISSION OF PLAN TO MOTI: _____

SECTION 4A: ROOT CAUSE ANALYSIS

Why did the Non-conformance occur?

SECTION 4B: CORRECTIVE ACTION PLAN

What is the Contractor's plan to prevent re-occurrence of the Non-conformance?

SIGNATURES:

CONTRACTOR REPRESENTATIVE COMMITS TO IMPLEMENTING THE CORRECTIVE ACTION PLAN AND CONFIRMS THAT THE PLAN IS INTENDED TO PREVENT THE RE-OCCURRENCE OF THE NON-CONFORMANCE IDENTIFIED IN SECTION 2 OF THIS REPORT.

NAME _____ SIGNATURE _____ DATE _____

MINISTRY REPRESENTATIVE ACCEPTS THE CORRECTIVE ACTION PLAN. ACCEPTANCE DOES NOT NEGATE THE CONTRACTOR'S RESPONSIBILITY TO PERFORM THE SERVICES IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS.

NAME _____ SIGNATURE _____ DATE _____