FW: Hwy 97N South of Farmington - November 7, 2017 Fatal after the fact MVA

From:	Schien, Norman TRAN:EX <Norman.Schien@gov.bc.ca>
To:	Tripathi, Mahesh TRAN:EX <Mahesh.Tripathi@gov.bc.ca>
Cc:	Dowling, Steve TRAN:EX <Steve.Dowling@gov.bc.ca>, Kambo, Nav TRAN:EX <Nav.Kambo@gov.bc.ca>
Sent:	January 5, 2018 2:57:58 PM PST
Attachments:	image001.png, News Article - Hwy 97 South of Farmington.pdf, Hwy 97 South of Farmington Fatal MVA.pdf, image002.jpg, H0208 - Fatal Report 97N 07.11.2017 Hwy 97 South of Farmington.doc

Mahesh,
Please review this fatal report based on the new process.

……

1. All Fatal Reports (Form H0208) are submitted to Norm Schien. The online version of the H0208 Form has been updated to reflect this change. However, you may still receive a report directly from District staff. In that case, It is suggest that you ask Norm if you are assigned to review the report or he wishes to assign another team member and distribute the workload evenly among our team. http://gww.th.gov.bc.ca/forms/getFormRedirect.aspx?fDomain=2&formId=481
2. Norm assigns a Traffic Ops Engineer or EIT to review the report.
3. The assigned engineer would ensure:
    a. Report is complete i.e. no blank cells, LKI reference, highway and brief incident description is provided
    b. Report is accurate i.e. description of location matches LKI reference and GPS coordinates, date and time is correct
    c. Desktop Exercise: Look for any possible contributing factor(s) based on information provided to us through fatal reports and identify any condition susceptible to correctness with traffic engineering review and recommendations
    d. Review latest CPL/CPS i.e. Is the location or segment listed under Criteria 1 or Criteria 2.

If no action required against Item c and/or d above, Traffic Ops Engineer would distribute to the following: Jeric Flores, Joy Sengupta, Norm Schien and DMT with a note stating that our review is complete and no action is required at this time.
If action is thought required against Item c and/or d above, Traffic Ops Engineer would;

i. **Discuss** possible course of actions with **Norm Schien and/or Graeme Cross and if required** with District staff, Regional Planning or the Regional Management Team. Typically the assigned engineer (after having a discussion with Norm and/or Graeme) would provide options along with pros and cons of each option and possibly a preferred recommendation to the District. It is important to note that Regional Planning Sections, in consultation with Districts, review and adjust their programs on an ongoing basis as per available funding. Our recommendations should consider budget and other constraints and therefore providing a few options would help Districts making a decision against other primacies. If action is required against Item c and/or d, the Traffic Ops Engineer would (again after discussing possible courses of action with Norm Schien and/or Graeme Cross and if required) ……
ii. Distribute the report to the following: Jeric Flores, Joy Sengupta, Norm Schien and DMT with a note stating the outcome of item i above.

At the completion of fatal report review by one of our Ops engineers, Jeric will be included in the e-mail distribution as stated above.
He would ensure that all reports are saved in the following folder and report name is formatted as shown in the example below.

s.15

Report Name Format (4 Digit LKI Segment Number-km Mark-Nearest Landmark-yyyymmdd)

3330-42.51-Chilanko Loop-20160610

He will also save the e-mail distribution. The e-mail file will have the same naming format as above and will be saved in the following folder.

s.15

……

……

If you have any questions or work load is an issue please let me know.

Norm

Norman Schien, PEng
Senior Traffic Ops Eng (Regional Traffic Engineer)
Traffic and Highway Safety Engineering, Northern Region
BC Ministry of Transportation
Work 250 565 6261
Cell 250 961 9173
Norman.Schien@gov.bc.ca

From: Kambo, Nav TRAN:EX
Sent: Wednesday, November 8, 2017 11:55 AM
To: Schien, Norman TRAN:EX
Cc: Dowling, Steve TRAN:EX; Kambo, Nav TRAN:EX
Subject: Hwy 97N South of Farmington - November 7, 2017 Fatal after the fact MVA

Good Afternoon Norman,

Please find attached the corresponding documentation to the Hwy 97N, South of Farmington, November 7, 2017 Fatal after the fact MVA.

Please let me know if you require anything else.

Nav Kambo
Area Manager, Roads
Ministry of Transportation and Infrastructure
Dawson Creek, British Columbia
Cell: (250) 261-9237

BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

Alaska Highway News

Alaska Highway crash victim dies in hospital

Alaska Highway News

November 8, 2017 08:41 AM

Copyright

Hwy 97 Southbound Facing

Hwy 97 Northbound Facing

Hwy 97 Northbound Facing

Hwy 97 West Facing

Hwy 97 Southbound facing

3330-42.51-Chilanko Loop-20160610

BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

REPORT OF FATAL COLLISION

The information collected on this form is directly related to, is necessary for, and will be used to assess safety problems and evaluate the need for safety improvement action plans. If you have any questions about the collection, use and disclosure of this information, contact the Senior Highway Safety Engineer (250) 356-5292 BC Ministry of Transportation, PO Box 9850 Stn Prov Govt, Victoria BC V8W 9T5

To: **Senior Traffic Operations Engineer** — Norm Schien

From: **District Manager, Transportation** — Nav Kambo C/O Dean Daniels

Accident Case Number from ***Top Left Corner*** of Police MVA Form: R 2017-8198

Accident Date/Time: 2017 (Year) 11 (Month) 07 (Day) 13 (Hour) 00 (Minute) — 24 Hr Format

Location of Collision: Hwy 97N, South of Farmington

LKI Hwy ____ Seg. ____ Km ____ ☐ N/A

GPS Coordinates: 55.921426 (Latitude) -120.530547 (Longitude)

☐ Signalized Intersection ☐ Unsignalized Intersection ☐ Driveway ☐ Railway Crossing

☒ Highway Section ☐ Ramp ☐ Bridge

☐ Other

☐ Tangent | Radius of Curve ____ m | % Grade ____

Weather: ☐ Clear ☐ Cloudy ☐ Raining ☒ Snowing/Sleet ☐ Hail ☐ Fog ☐ Smog/Smoke ☐ Strong Wind

Road Surface Conditions: ☐ Dry ☐ Wet ☐ Muddy ☒ Snow ☐ Slush ☐ Ice

Posted Speed: 90 km/h | Advisory Speed: n/a km/h

A Vehicle Type: Truck and Pup — Direction: ☐ **N** ☒ **S** ☐ **E** ☐ **W**

B Vehicle Type: Toyota Camry — Direction: ☒ **N** ☐ **S** ☐ **E** ☐ **W**

Any highway maintenance/construction activity in immediate collision vicinity? ☐ YES ☒ NO

(If yes, please include record plan of work site showing all signs and other control(s))

Has location been inspected by MoT since the collision? ☒ YES ☐ NO

Brief description of the vehicle(s) movement(s) just before and during the collision:

Northbound Toyota Camry crossed centerline into southbound semi-tractor trailer (Truck w. Pup). Truck hit passenger side of Camry, crushing passenger compartment, throwing car into the ditch of the southbound lane, truck came to a stop in southbound ditch.

Form completed by: Nav Kambo, Road Area Managers

(print name and position)

Other Comments:

Toyota Camry was occuppied by two younger males, passenger later deceased in the hospital. Initial indications point towards travelling too fast for road conditions of sedan being a contributing factor. Reports of vehicle fishtailing just prior to impact by the truck driver. Semi-truck driver was not injured. Upon arrival of Road Area Manager at approximately 1304 hours a pavement surface and air temperature of -6C was measured. Pavement was partially covered by compact and fresh snow. Camry was equipped with all season tires, M&S rated.

Sketch of Collision:

see e-mail attachments of pictures, please add in Norm

Optional attachments: Newspaper clips, maintenance report and photos

~ CONFIDENTIAL ~

RE: Hwy 97N South of Farmington - November 7, 2017 Fatal after the fact MVA

From: Tripathi, Mahesh TRAN:EX <Mahesh.Tripathi@gov.bc.ca>
To: Bennetts, Shane TRAN:EX <Shane.Bennetts@gov.bc.ca>
Sent: April 10, 2019 11:24:37 AM PDT
Attachments: image002.jpg, image004.jpg, image008.jpg, image001.png

Hi Shane,

I suspect the GPS info is incorrect based on the pictures & news article. Since there was no LKI info provided, its difficult for me to confirm its accuracy.

The location (22.84 km) you provided doesn't match the GPS location which is roughly at 25 km (175 m south of Rd # 241). Your suggested location is about 160 m north of Miller Rd # 239 which is roughly 2 km south of the GPS location. The discrepancy is too high for me to confirm the correct location.

20.63	F1	TRAFFIC COUNT STATION 65340P (P-43-3NS)	
21.11	S1	SIGN: 100 KMH	R
21.30	A1	DIXON RD #218	L
21.73	S1	SIGN: FARMINGTON UNINCORPORATED	R
22.68	A1	MILLER RD #239	R
23.55	G1	ACCESS: FARMINGTON SERVICES	L
23.87	A2	PARKLAND RD #218A	L
24.29	S1	SIGN: CBC RADIO	R
24.97	S4	25 KM POST	R
25.21	A1	RD # 241	R
25.84	A1	KISKATINAW RD #220	L
25.84	A1	OLD ALASKA HWY	R
27.34	G2	FIELD ACCESS	R
28.10	L2	2 LANES TO 1 S/B	

I suggest you talking to Nav or somebody who knows the collision location & confirm the location.

Thanks.
Regards,

Mahesh Tripathi
Office: 250-565-4134 | Cell: 778-349-4007

From: Bennetts, Shane TRAN:EX
Sent: April 1, 2019 3:07 PM
To: Tripathi, Mahesh TRAN:EX <Mahesh.Tripathi@gov.bc.ca>
Subject: RE: Hwy 97N South of Farmington - November 7, 2017 Fatal after the fact MVA

Hi Mahesh,

From Kilometer 0 of the Alaska Hwy (97N) to the MVA site is 22.84 Kms. This is all the info I can find for Hwy, Seg and Km for LKI. I used the GPS coordinates provided on the report from Nav Kambo to find this info.

Thanks,
Sahne

From: Tripathi, Mahesh TRAN:EX
Sent: Friday, March 29, 2019 4:27 PM
To: Bennetts, Shane TRAN:EX
Cc: Dowling, Steve TRAN:EX
Subject: RE: Hwy 97N South of Farmington - November 7, 2017 Fatal after the fact MVA

Hi Shane,

Considering your knowledge of the area/route, it would be more appropriate if you could provide the LKI information that matches pictures & GPS coordinates in the report.

Thanks.
Regards,

Mahesh Tripathi
Office: 250-565-4134 | Cell: 778-349-4007

From: Bennetts, Shane TRAN:EX
Sent: March 25, 2019 1:40 PM
To: Dowling, Steve TRAN:EX <Steve.Dowling@gov.bc.ca>; Tripathi, Mahesh TRAN:EX <Mahesh.Tripathi@gov.bc.ca>
Subject: RE: Hwy 97N South of Farmington - November 7, 2017 Fatal after the fact MVA

Hi Mahesh,

Attached is a few pics that may help with LKI information you are after. Please contact me if you have any questions.

Thanks,

Shane Bennetts
250-784-2370 Office 778-349-7849 cell
Area Manager - Roads South Peace
Ministry Of Transportation & Infrastructure
BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

---

From: Dowling, Steve TRAN:EX
Sent: Monday, March 25, 2019 10:32 AM
To: Bennetts, Shane TRAN:EX
Subject: FW: Hwy 97N South of Farmington - November 7, 2017 Fatal after the fact MVA

Perhaps you would be able to assist on this request.

Thanks
Steve

From: Tripathi, Mahesh TRAN:EX
Sent: Wednesday, February 20, 2019 2:35 PM
To: Dowling, Steve TRAN:EX
Cc: Daniel, Dean TRAN:EX
Subject: FW: Hwy 97N South of Farmington - November 7, 2017 Fatal after the fact MVA

Hi Steve,

Please see the attached. The report doesn't provide LKI information. I tried to locate the collision site using GPS information but suspect its incorrect.

Could you please review & confirm the location?

Thanks.
Regards,

Mahesh Tripathi
Office: 250-565-4134 | Cell: 778-349-4007

From: Schien, Norman TRAN:EX
Sent: January 5, 2018 2:58 PM
To: Tripathi, Mahesh TRAN:EX <Mahesh.Tripathi@gov.bc.ca>
Cc: Dowling, Steve TRAN:EX <Steve.Dowling@gov.bc.ca>; Kambo, Nav TRAN:EX <Nav.Kambo@gov.bc.ca>
Subject: FW: Hwy 97N South of Farmington - November 7, 2017 Fatal after the fact MVA

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s.15

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3330-42.51-Chilanko Loop-20160610

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s.15

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……

If you have any questions or work load is an issue please let me know.

Norm

Norman Schien, PEng
Senior Traffic Ops Eng (Regional Traffic Engineer)
Traffic and Highway Safety Engineering, Northern Region
BC Ministry of Transportation
Work 250 565 6261

Cell 250 961 9173
Norman.Schien@gov.bc.ca

From: Kambo, Nav TRAN:EX
Sent: Wednesday, November 8, 2017 11:55 AM
To: Schien, Norman TRAN:EX
Cc: Dowling, Steve TRAN:EX; Kambo, Nav TRAN:EX
Subject: Hwy 97N South of Farmington - November 7, 2017 Fatal after the fact MVA

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Nav Kambo
Area Manager, Roads
Ministry of Transportation and Infrastructure
Dawson Creek, British Columbia
Cell: (250) 261-9237

BRITISH COLUMBIA | Ministry of Transportation and Infrastructure

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23.55	G1	ACCESS: FARMINGTON SERVICES	L
23.87	A2	PARKLAND RD #218A	L
24.29	S1	SIGN: CBC RADIO	R
24.97	S4	25 KM POST	R
25.21	A1	RD # 241	R
25.84	A1	KISKATINAW RD #220	L
25.84	A1	OLD ALASKA HWY	R
27.34	G2	FIELD ACCESS	R
28.10	L2	2 LANES TO 1 S/B	

Back s.15

OnScene

Highways Incident Notification

Incident Command is currently

RCMP (Primary)

Reported by: s.15

Last Update: 2017-11-07-12:03:39

OnScene #:IR7696

Version: 4321

DriveBC #: In Progress

Public Messaging

* indicated fields that have changed since the previous version

1. Location*

Hwy 97

2. Impact to Traffic*

• Closed

Directions of Traffic Impacted *

• Southbound

None

Comments*: Both directions closed

3. Incident Description*

• MVI

Comments*: Gravel truck and pup and sedan involved in accident. Passengers trapped in sedan.

4. Additional (Public) Comments*

No Additional Comments

5. Estimated Time of Opening (ETO) *

Assessment in Progress

Next Update*: Tue 7 14:00

View Location on Map s.15

Close Map s.15

Internal Report

6. Detailed Event Description*

Gravel trruck and pup travelling southbound. Sedan travelling northbound and crossed centre lane into gravel truck.

Estimated Time of Event*: Tue 7 13:00

7. Injuries and Fatalities *

People Involved*: 3 (Confirmed)

Injuries*: 2 (Estimate)

None Entered

8. MoTI Personnel*

Area Manager or District Rep:

On-Scene

RCMP General Duty:

On-Scene

Ambulance:

On-Scene

Fire / Search and Rescue:

On-Scene

Maintenance Contractor:

On-Scene

Names of Personnel on Site*: Nav Kambo

9. Incident Responders *

Area Manager or District Rep:

On-Scene

RCMP General Duty:

On-Scene

Ambulance:

On-Scene

Fire / Search and Rescue:

On-Scene

Maintenance Contractor:

On-Scene

Other*:

10. Site History*

None Entered

11. Weather/Road Conditions*

Compact Snow with Slippery Sections

Air Temp*: Cold

Road Surface Type & Temperature*: Asphalt

Comments*: None Entered

12. Maintenance Contractor's Current Activities*

TrafficNone Entered

13. Traffic Management *

Not Required

Traffic Control in Place

Emergency Services Providing

Maintenance Contractor Providing

Queue Management*

None Entered

Detour Route*

None Entered

View Images (0) * s.15

Previous s.15

Image 1 of 0

Next s.15

Hide Images s.15

Forward Current Report

Send Executive Summary

1. Location!!!PPP!!! Hwy 97!!!PPP!!! !!!PPP!!! 2. Impact to Traffic!!!PPP!!!

- Closed!!!PPP!!!

- Southbound!!!PPP!!!

Comments: Both directions closed!!!PPP!!! !!!PPP!!! 3. Incident Description!!!PPP!!! - MVI!!!PPP!!!Comments: Gravel truck and pup and sedan involved in accident. Passengers trapped in sedan.!!!PPP!!! !!!PPP!!! 4. Public Comments!!!PPP!!! Not applicable!!!PPP!!! !!!PPP!!! 5. ETO!!!PPP!!! Assessment in Progress!!!PPP!!! Next Update: Nov 7 14:00!!!PPP!!! !!!PPP!!! 6. Detailed Event Description!!!PPP!!! Gravel trruck and pup travelling southbound. Sedan travelling northbound and crossed centre lane into gravel truck.
!!!PPP!!! Estimated Time of Event: Nov 7 13:00!!!PPP!!! !!!PPP!!! 7. Injuries\Fatalities!!!PPP!!! Num. People Involved: 3 (Confirmed)!!!PPP!!!Injuries: 2 (Est.)!!!PPP!!!Fatalities: 0 (Est.)!!!PPP!!! !!!PPP!!! 8. MoTI Staff!!!PPP!!! - Area Manager or District Rep: On-Scene!!!PPP!!!- Names: Nav Kambo!!!PPP!!! !!!PPP!!! 9. Incident Responders!!!PPP!!! - RCMP General Duty: On-Scene!!!PPP!!!- Ambulance: On-Scene!!!PPP!!!- Fire / Search and Rescue: On-Scene!!!PPP!!!- Maintenance Contractor: On-Scene!!!PPP!!! !!!PPP!!! 10. Site History!!!PPP!!! Not applicable!!!PPP!!!!!!PPP!!! 11. Weather/Road Conditions!!!PPP!!! Compact Snow with Slippery Sections!!!PPP!!!Air Temp: Cold!!!PPP!!!Road Surface: Asphalt!!!PPP!!! !!!PPP!!! 12. MC's Activities!!!PPP!!! Traffic!!!PPP!!! !!!PPP!!! 13. Traffic Management!!!PPP!!! - Emergency Services Providing !!!PPP!!!

Loading...

Back s.15

Reload Session s.15

BC Ministry of Transportation and Infrastructure 2.2.1_0013

s.15

Maintenance Class - Summer

1.	
IIT_NE_ID	2781699
IIT_INV_TYPE	MC
IIT_PRIMARY_KEY	2781699
IIT_START_DATE	2006-12-01
IIT_DATE_CREATED	2006-12-01
IIT_DATE_MODIFIED	2011-11-07
IIT_CREATED_BY	KENNASH
IIT_MODIFIED_BY	TAMMYLEE
IIT_ADMIN_UNIT	119
IIT_DESCR	21
NAU_UNIT_CODE	421
SUMMER_CLASS_RATING	3
WINTER_CLASS_RATING	A
SCHOOL_BUS_ROUTE	Y
COMBINED_CLASS_RATING	3A
OBJECTID	49201

Numbered Routes (DSA)

1.	
NE_ID	1301624
NE_UNIQUE	H97
NE_LENGTH	2302.832
NE_DESCR	Rte 97 NB between the BC/Washington Border and the BC/Yukon Border
NE_START_DATE	1800-02-01
NE_ADMIN_UNIT	163
ADMIN_UNIT_CODE	100
NE_GTY_GROUP_TYPE	GDSA
PREFIX	H
HIGHWAY_NUMBER	97
DIRECTION	N
OBJECTID	85596

Road Features Inventory (RFI)

1.	
NE_ID	1305689
NE_UNIQUE	21-B-1-00097N
NE_LENGTH	50.996
NE_DESCR	Rte 97 NB - Alaska Highway
NE_START_DATE	1800-02-01
NE_ADMIN_UNIT	19
ADMIN_UNIT_CODE	421
NE_GTY_GROUP_TYPE	GRFI
DIRECTION	N
AREA_MANAGER_AREA	B
HIGHWAY_NUMBER	0097
HIGHWAY_ALPHA	N
SUB_AREA	1
SERVICE_AREA	21
HIGHWAY_TYPE	0
OBJECTID	157876

RE: Maintenance Standards Review

From: Buckle, Jon TRAN:EX s.15
To: Freer, Geoff TRAN:EX <GFREER@Victoria1.gov.bc.ca>
Cc: Newhouse, John TRAN:EX <JNEWHOUS@Victoria1.gov.bc.ca>, Barry, Art TRAN:EX <ABARRY@Victoria1.gov.bc.ca>, Duncan, Dave TRAN:EX <DDUNCAN@Victoria1.gov.bc.ca>
Sent: June 18, 2002 3:33:08 PM PDT

Geoff:
I had asked Art Barry to become more involved with the various Maintenance initiatives now underway and particularly with regard to the standards. By cc to Dave Duncan I will ask him to include Art in the standards review.
thx...jon

-----Original Message-----
From: Freer, Geoff TRAN:EX
Sent: Tuesday, June 18, 2002 3:03 PM
To: Buckle, Jon TRAN:EX
Subject: FW: Maintenance Standards Review

fyi

-----Original Message-----
From: Duncan, Dave TRAN:EX
Sent: Tuesday, June 18, 2002 2:34 PM
To: Ogden, Bill TRAN:EX; Blixrud, Rick TRAN:EX; McKinley, Shawn TRAN:EX; Pharand-Fraser, Nicole TRAN:EX
Subject: Maintenance Standards Review

Afternoon All,

In preparation for the conference call today I have attached several documents related to our maintenance standards review. Kind of a lot to chew on on short notice, but I thought it better to have the background than not.

Guiding Principles - the principles that we are using in reviewing the maintenance standards (Shawn has an updated set)
1_130 to 3_310 - the current standards for grading and snow plowing
remaining attachments - draft revisions to the standards

Basically we are attempting to revise the current standards for the next round of Maintenance Contracts to reflect several objectives:

Remove methodology from the standards. The standards should detail our end product expectations. It should be the responsibility of the contractor to determine the methodology to achieve that expectation.
The standards should truly reflect what our expectations are (i.e. we mean what we say). In order to create an even playing field where a new contractor can understand what our expectations are and fairly bid against experienced ones, we needs to have consistent expectations that the contractors must meet.
Routine vs. Unit Price. What activities should be quantified and what routine?
We want performance based standards. What are our measures of performance for each activity and how would we expect the contractor to document it? This fits into the Quality Audit approach of contract administration (CAP) where we expect the contractor to develop his own quality plan and perform quality control and assurance testing and inspections.

We want winter and grading standards that encourage the contractor to proactively monitor and respond to winter events or summer gravel road conditions to meet priorities and address customer concerns instead of a reactive response based approach that many currently implement.

There are others, but those are some of the priorities.

<< File: Guiding Principles.doc >> << File: 1_130.doc >> << File: 3_300.doc >> << File: 3_310.doc >> << File: GRAVEL SURFACE GRADING.doc >> << File: HIGHWAY SNOW REMOVAL.doc >> << File: Grading Draft June 6.doc >> << File: Snow removal Draft June 6.doc >> << File: Grading Draft June 12.doc >>

David Duncan, P.Eng.
A/District Manager Transportation, Rocky Mountain District
Ministry Of Transportation
phone: (250) 426-1500
fax: (250) 426-1523
email: dave.duncan@gems6.gov.bc.ca

winter standards

From:	Pharand-Fraser, Nicole TRAN:EX s.15
To:	Freer, Geoff TRAN:EX <GFREER@Victoria1.gov.bc.ca>, Lachmuth, Grant TRAN:EX <GLACHMUT@Victoria1.gov.bc.ca>, McKinley, Shawn TRAN:EX <SHMCKINL@Victoria1.gov.bc.ca>, Fredrickson, Reg TRAN:EX <RFREDRIC@Victoria1.gov.bc.ca>, Mackay, Bruce TRAN:EX <BMACKAY@Victoria1.gov.bc.ca>, Newhouse, John TRAN:EX <JNEWHOUS@Victoria1.gov.bc.ca>, Proudfoot, Mike TRAN:EX <MAPROUDF@Victoria1.gov.bc.ca>, Cooper, Tracy TRAN:EX <TCOOPER@Victoria1.gov.bc.ca>, Duncan, Dave TRAN:EX <DDUNCAN@Victoria1.gov.bc.ca>, Keiser, Wayne TRAN:EX <WAKEISER@Victoria1.gov.bc.ca>, Buckle, Jon TRAN:EX <JBUCKLE@Victoria1.gov.bc.ca>
Sent:	September 4, 2002 4:25:50 PM PDT
Attachments:	Abravises Chemicals Sept4.doc, Snow removal Draft Sept4.doc, Grading Draft Aug 29.doc

To the members of the 2003-2004 Highway Maintenance Contract Board - as promised at the meeting last week and to the Standards Working Group

Here is the latest draft of the two major winter standards: 'Winter Abrasive and Chemical Snow and Ice Control' and 'Snow Removal'.

Those of you who were at the meeting last Friday received a hard copy of the latest draft of the Grading standard. Here is the electronic version for those of you who didn't get a copy.

I would appreciate your comments/feedback on all three standards by Wednesday, September 11.

Nicole Fraser
Administrator
Maintenance Standards and Quality Assurance
(250) 387-7646

B.C. MINISTRY OF TRANSPORTATION

Maintenance Standard

WINTER ABRASIVE AND CHEMICAL SNOW AND ICE CONTROL

A. OBJECTIVE

The Contractor will perform WINTER ABRASIVE AND CHEMICAL SNOW AND ICE CONTROL as required on Highways to restore surface conditions on the Highways which constitute or have the potential to create an unsafe condition for the traveling public or other Highway users by:

i. restoring surface traction;
ii. preventing the development of a bond between compact snow and the pavement surface on Class A & B Highways when an event is forecast;
iii. notwithstanding ii above, getting to bare pavement in optimum time;

B. END RESULT SPECIFICATIONS

The Contractor will respond to Slippery conditions in accordance with the response times set out below notwithstanding that the Contractor will ensure patrol vehicles take action to restore surface traction by immediately applying Winter Abrasive and/or Chemicals when Slippery conditions are encountered.

When snowfall, black ice, freezing rain, dropping or increasing temperatures are Forecast, the Contractor will commence the following operations immediately:

- Increase snow and weather monitoring;
- Increase forecast monitoring;
- Institute patrols and /or increase patrols;
- Notify/deploy resources;
- Communicate internally and externally;

The Contractor will rely on weather and forecast information to determine which combination of anti icing, deicing and/or abrasive materials to use.

On Class A & B Highways, resources will be deployed 90 minutes in advance of a forecasted event and the Contractor will take appropriate measures to prevent the bond from occuring between the snow and the pavement surface on the Travelled Lanes.

On the Travelled Lanes of all other Highways, abrasive and/or chemical application will commence immediately, when the forecasted condition occurs.

The Contractor will give priority response to school zones, intersections, curves, hills, and Bridge Decks, accident sites and any other location on the Highway which could present a hazard to the traveling public and other Highway users.

When snowfall, black ice, freezing rain, dropping or increasing temperatures occur that are not forecast, the Contractor, will deploy resources immediately upon notification or detection of the condition.

The following table establishes the maximum response times within which the Contractor will have restored traction, commencing from initial detection by or notification to the Contractor:

			Winter Highway Classification			
			A	**B**	**C**	**D**
(i)	during snowfall, freezing rain, black ice	hills over 5% gradient (one lane each direction)	60 minutes	90 minutes	2 h	4 h
		curves under 60 kilometres per hour	60 minutes	90 minutes	2 h	4 h
		school zones & intersections	90 minutes	2 h	3 h	6 h
		other locations	2 h	3 h	4 h	8 h
(ii)	after snowfall	all hills (all lanes)	5 h	8 h	24 h	2 d
		all curves	5 h	8 h	24 h	2 d
		all other locations	24 h	36 h	3 d	as required
(iii)	when slippery surfaces are encoun-tered during patrol	all locations	immediate application	immediate application	Immediate application	immediate application

Legend
h – hours
d - days

The following table establishes the maximum response times within which the Contractor will have removed compact snow or ice remaining on paved Highway surfaces after snowfalls have ended and plowing operations on the Traveled Lanes have been completed.

Winter Highway Classification			
A	**B**	**C**	**D**
2 d	3 d	7 d	28 d

Legend
d – days

Note: Notwithstanding the above, extended periods of extreme cold will be taken into consideration with respect to response times.

Materials

Chemicals used in snow and ice control must be accepted in writing by the Province for use on the Highways.

The maximum allowable particle size for Winter Abrasive materials, and the mean Gradation limits for these materials when tested according to ASTM Designations C136 and C117, is as follows:

		Winter Highway Classification		
		Class A & B	**All Class C and Class D paved only**	**All Class D gravel Highways**
(i)	Maximum particle size	12.5 mm	16 mm	19 mm
(ii)	metric screen size			
	19 mm	N/A	N/A	100
	16 mm	N/A	100	N/A
	12.5 mm	100	N/A	N/A
	9.5 mm	N/A	80-100	80-100
	4.75 mm	50-95	50-95	50-95
	2.36 mm	30-80	30-80	30-80
	0-600 mm	10-50	10-50	10-50
	0-300 mm	0-25	0-25	0-25
	0-075 mm	0-6	0-6	0-6

Note: The figures shown under section B.1.a)(ii) above represent the percent of material which passes that particular screen size.

B.C. MINISTRY OF TRANSPORTATION

Maintenance Standard

HIGHWAY SNOW REMOVAL

A. OBJECTIVE

The Contractor will perform HIGHWAY SNOW REMOVAL on Highways as required to remove loose snow and slush, compact snow and to expose highway surfaces.

B. END-RESULT SPECIFICATIONS

The Contractor will ensure that snow accumulations remain below the maximum allowable accumulations, to the full width of the Traveled Lanes consistent with the Highway Classification as set out in this standard.

When snowfall is Forecast, the Contractor will commence the following operations immediately:

- Increase snow and weather observations and monitoring
- Increase forecast monitoring
- Institute patrols and /or increase patrols
- Notify/deploy resources
- Communicate internally and externally

When the forecasted snowfall occurs, snow and slush removal will commence immediately.

When snowfall occurs that is not forecast, the Contractor, immediately upon notification or detection of snowfall, will deploy resources; and, the Contractor will commence removal of snow and slush within 90 minutes [some have suggested that the Contractor should start sooner].

a) Highway surface plowing

(i) The Contractor will complete surface plowing to remove loose snow and slush to expose paved or compact highway surfaces on all Traveled Lanes on Winter Class A, B, C and D Highways within 2 days of the last measurable snowfall.

(ii) Subject to section (i) above, the following table establishes the maximum allowable total accumulations on each Highway Traveled Lane:

Winter Highway Classification	Maximum Allowable Accumulation (cm)		
	One Lane Each Direction	Second Lanes	All Other Lanes
A	4.0 cm	6.0 cm	15.0 cm
B	4.0 cm	6.0 cm	20.0 cm
C	15.0 cm	20.0 cm	n/a
D	25.0 cm	n/a	n/a
E	30.0 cm	n/a	n/a

A. The Contractor will establish and follow a plan which includes sufficient and appropriate resources considering plowing routes and priorities such that all the Highways of that Class within the Service Area will be plowed before the maximum accumulation depth is reached.

B. The Contractor will develop and follow a timetable for plowing school bus routes in consultation with the local school district to ensure optimum school bus service.

C. The Contractor will develop and follow a timetable for plowing key commuter and industrial routes in consultation with local stakeholders, including but not limited to the local industries (forestry, mining, oil and gas), the RCMP, local and regional governments to ensure optimum service to commuters and local industry.

b) compacted snow or ice on pavement surfaces

The following table establishes the maximum periods of time from the end of a measurable snowfall within which the Contractor will remove compacted snow or ice from all travelled lanes with paved Highway surfaces:

Winter Highway Classification			
A	B	C	D
2 d	3 d	7 d	28 d

Legend
d – days

Note: Notwithstanding the above, extended periods of extreme cold will be taken into consideration with respect to response times.

c) Shoulder clearing

The following table establishes the maximum periods of time from the end of measurable snowfall within which the Contractor will have pushed snow and ice back beyond the Shoulder edge:

Winter Highway Classification			
A	**B**	**C**	**D**
4 d	7 d	7 d	28 d

Legend
d – days

Note 1: Notwithstanding the above, on Class A and B Highways at all Superelevated curves or locations where the Shoulder edge is higher than the Traveled Lanes, the Contractor will have pushed snow and ice fully back beyond the Shoulder edge within three days of the end of measurable snowfall to prevent snowmelt drainage onto the pavement.

Note 2: Notwithstanding the above, extended periods of extreme cold will be taken into consideration with respect to response times.

The contractor will prepare and implement a plan to keep shoulders clear on a more regular basis in areas of frequent pedestrian use (based on consultation with school districts, related stakeholders and local communities).

d) Miscellaneous

The Contractor will plow Overpasses and interchanges so as not to throw snow onto underlying Highways or railways.

The Contractor will keep Rest Areas, pull-outs, parking areas, Weigh Scales, and other areas designated by the Province open with the same priority as a Highway with the next lower class from adjacent Highway, e.g.: adjacent highway is class “B”; maintain rest area as class”C”. Designated "Chain-up" areas will be maintained to the same priority as the adjacent highway.

The Contractor will remove loose snow and ice from footpaths, walkways, bicycle paths and commonly used pedestrian accesses on Rights-Of-Way within 2 days after the Traveled Lanes have been cleared on that Highway.

C. NON-COMPLIANCE:

The Contractor shall be in Non-Compliance when the End Result Specifications have not been achieved. Without limiting the generality of the foregoing, the Contractor will be in Non-Compliance when:

1. The Contractor has failed to maintain an accepted work procedure in the Quality Plan.
2. The Contractor has failed to develop and put into place a Winter Operational Plan that meets the End Result Specifications.
3. The Contractor has failed to deploy the necessary resources in accordance with the Operational Plan resulting in failure to meet performance specifications.
4. Conditions requiring corrective action exist and have not been observed and documented by the Contractor.
5. Conditions requiring corrective action exist, have been observed and documented by the Contractor but services were not performed effectively and/or within the response times outlined in section B.

B.C. MINISTRY OF TRANSPORTATION

Maintenance Standard

GRAVEL SURFACE GRADING AND RE-SHAPING

A. OBJECTIVE

The Contractor will monitor the condition of and perform GRAVEL SURFACE GRADING AND RE-SHAPING on Dirt and Gravel Highways as required to maintain a stable and safe surface that is:

(i) smooth,
(ii) free-draining,
(iii) Well-compacted,
(iv) crowned, and
(v) Superelevated.

B. END-RESULT SPECIFICATIONS

The Contractor will grade Gravel Highways to restore a surface that has the potential to create an unsafe condition, to a smooth, stable and safe condition and to repair deficiencies in accordance with the response times set out below;

Deficient conditions include, but are not limited to:

i) Pot-Holes: average more than 1 per 25 metres of road
ii) Rutting, Ponding and Washboarding: exceeding 30 mm depth
iii) Cross falls: less than 4 cm for every 1 m of road surface
iv) Lack of uniform road shoulder edge
v) Loose material: exceeding 50 mm depth

It is recognized that roads constructed of dirt vary greatly from area to area and may require different levels of maintenance to maintain a smooth surface.

Under normal circumstances and within the context of the Contractor Quality Plan the following are the maximum response times, upon notification of, or detection by, within which the Contractor will repair the deficiencies:

Summer Highway Classification			
3 & 4	**5**	**6**	**7**
2 d	3 d	6 d	15 d

Legend
d – days

NOTE 1: Not withstanding the above response times, it is recognized that many concurrent deficiencies in the contract area may require special consideration through a contractor ad hoc plan.

NOTE 2: Not withstanding the above response times, on occasion, significant customer and stakeholder complaints will result in the need to provide immediate response.

The Contractor's responsibility will be limited to:

xxxxx grader/hours for grading;
xxxxx grader/hours for full grade surface reshape.

NON-COMPLIANCE:

The Contractor shall be in Non-Compliance when the End Result Specifications have not been achieved. Without limiting the generality of the foregoing, the Contractor will be in Non-Compliance when:

1. The Contractor has failed to maintain an accepted work procedure in the Quality Plan.
2. The Contractor has failed to develop and put into place an accepted Summer Operational Plan that meets the End Result Specifications.
3. The Contractor has failed to deploy the necessary resources in accordance with the Operational Plan resulting in failure to meet performance specifications.
4. Conditions requiring corrective action exist and have not been observed and documented by the Contractor.
5. Conditions requiring corrective action exist, have been observed and documented by the Contractor but repairs were not performed effectively and/or within the response times outlined in section B.

Standards

From:	Newhouse, John TRAN:EX s.15
To:	TRAN ALL Regional Directors <THARDIR@Victoria1.gov.bc.ca>
Cc:	Fredrickson, Reg TRAN:EX <Reg.Fredrickson@gems7.gov.bc.ca>, Mackay, Bruce TRAN:EX <Bruce.Mackay@gems8.gov.bc.ca>
Sent:	November 6, 2002 3:06:59 PM PST
Attachments:	Snow removal Draft Nov 6.doc, Abravises Chemicals Nov 6.doc, Highway Patrol10061.doc

John D came down after lunch to advise us that we cannot change the response times in the standards. The cab sub and discussions at cabinet all spoke to no change. So since there was a tough battle getting approval, John and Dan want us to leave it.

John understands what we were trying to do, making the written word the same as what we expect. He is allowing us to come back with other ideas. Bruce proposed to John, making the adjustment in our quality procedures, i.e. 5 out of 10 times you must be in standard or something along this line. John could probably accept this type approach.

Attached are the rewritten standards on winter for your comments.

Do you have any ideas or comments???

John Newhouse
Director of 2003 - 2004 Maintenance Contracts
British Columbia Ministry of Transportation
Phone (250) 356-6737 Fax (250) 356-7276
E mail John.Newhouse@gems1.gov.bc.ca

B.C. MINISTRY OF TRANSPORTATION

Maintenance Standard

HIGHWAY SNOW REMOVAL

A. OBJECTIVE

The Contractor will perform HIGHWAY SNOW REMOVAL on Highways as required to remove loose ~~snow~~ snow, ~~and~~ slush and~~,~~ compact snow, ~~and to expose highway surfaces.~~ to ensure the safe and efficient movement of traffic.

B. ~~B.~~ END-RESULT SPECIFICATIONS

1. General Specifications

The Contractor will ensure that snow accumulations remain below the maximum allowable accumulations, to the full width of the Traveled Lanes consistent with the Highway Classification as set out in this standard.

When snowfall is ~~-~~forecast, the Contractor will be proactive by commenc~~e~~inge such operations as: ~~the following operations immediately:~~

- Increasinge snow and weather observations and monitoring
- Increasinge forecast monitoring
- increasinge patrols
- Notifying and ~~/~~deploying resources in advance of event as required
- Communicate internally and externally

~~When the forecasted snowfall occurs, snow and slush removal will commence immediately.~~

When snowfall occurs that is not forecast, the Contractor, immediately upon notification or detection of snowfall will~~,~~:

- Notify/deploy resources as required
- ~~will deploy resources; and, the Contractor will~~ commence removal of snow and slush as required ~~within 90 minutes~~

~~a) Highway surface plowing~~

DETAILED SPECIFICATIONS

(i) The Contractor will complete surface plowing to remove loose snow , slush and compact snowand slush to expose paved or compact from highway surfaces on all Traveled Lanes on Winter Class A, B, and C and D Highways within 2 days of the last measurable snowfall. Class D Highways shall be plowed within 2 days when the accumulation exceeds 5cm

(ii) Subject to section (i) above, the following table establishes the maximum allowable total accumulations on each Highway Traveled Lane:

Winter Highway Classification	Maximum Allowable Accumulation (cm)		
	One Lane Each Direction	Second Lanes	All Other Lanes
A	4.0 cm	6.0 cm	15.0 cm
B	4.0 cm	6.0 cm	20.0 cm
C	15.0 cm	20.0 cm	n/a
D	25.0 cm	n/a	n/a
E	30.0 cm	n/a	n/a

Not withstanding the above table, removal of slush and or broken compact which has the potential to create unsafe conditions shall be accomplished within the timeframes in the following table

Winter Highway Classification			
A	B	C	D
60 min	90 min	4 hours	n/a

A. The Contractor will establish and follow a plan which includes sufficient and appropriate resources considering plowing routes and priorities such that all the Highways of that Class within the Service Area will be plowed before the maximum accumulation depth is reached.

The Contractor will develop and follow a timetable for plowing school bus routes in consultation with the local school district to ensure optimum school bus service.

A. The Contractor will develop a plan that considers and follow a timetable for plowing key commuter, school bus and industrial routes in consultation with local stakeholders, including but not limited to the local industries (forestry, mining, oil and gas), the RCMP, local and regional governments to ensure optimum service to commuters and local industry.

*B. Notwithstanding the foregoing maximum allowable accumulation table, consideration shall be given when a contractor provides ADMEL continuously, until such time as all roads in the respective area are within maximum allowable accumulations. ******

*******{ADMEL (Area Defined Minimum Equipment Level) is defined by the Contractor for an area specified (foreman) by the Contractor. All units forming ADMEL must be integrated into the current respective contractor plan for addressing the storm event. ADMEL resource level considers only units operating per their respective function by trained operators on the Highway within the specified area. ADMEL does not include out of service time such as but not limited to maintenance, breakdown, servicing, fueling, travelling to or from defined work area. ADMEL does include time to travel for and loading of chemicals and abrasives and scheduled operator breaks. ADMEL can be any Contractor predefined combination of snow removal and chemical application equipment. Substitute equipment will be considered if the substitution rate ratio is predefined and equipment is compatible with contractor operational plan. It is understood that appropriate contingency/additional equipment above ADMEL must be determined by the contractor such that during the entire time in which maximum accumulations are exceeded, the contractor will not fall below the ADMEL level specified. }*

b) compacted snow or ice on paved surfaces

The following table establishes the maximum periods of time from the end of a measurable snowfall within which the Contractor will remove compacted snow or ice from all travelled lanes with paved Highway surfaces:

Winter Highway Classification			
A	**B**	**C**	**D**
2 d	3 d	7 d	28 d

Legend
d – days

Note: Notwithstanding the above, for extended periods of extreme cold, implementation of a contractor plan that addresses unsafe conditions such as but not limited to roughness and slippery surfaces will be taken into consideration with respect to response time .
~~Notwithstanding the above, extended periods of extreme cold will be taken into consideration with respect to response times~~

c) Shoulder clearing

The following table establishes the maximum periods of time from the end of measurable snowfall within which the Contractor will have pushed snow and ice back beyond the Shoulder edge:

Winter Highway Classification			
A	**B**	**C**	**D**
4 d	7 d	7 d	28 d

Legend
d – days

Note1: Notwithstanding the above, on Class A and B Highways at all Superelevated curves or locations where the Shoulder edge is higher than the Travelled Lanes, the Contractor will have pushed snow and ice fully back beyond the Shoulder edge within two days of the end of measurable snowfall to prevent snowmelt drainage onto the pavement.

Note2: Notwithstanding the above, during extended periods of extreme cold, implementation of a contractor plan to address unsafe conditions such as but not limited to ice on the travelled surface resulting from melt and refreeze will be taken into consideration.

~~Note 1: Notwithstanding the above, on Class A and B Highways at all Superelevated curves or locations where the Shoulder edge is higher than the Traveled Lanes, the Contractor will have pushed snow and ice fully back beyond the Shoulder edge within three days of the end of measurable snowfall to prevent snowmelt drainage onto the pavement.~~

~~Note 2: Notwithstanding the above, extended periods of extreme cold will be taken into consideration with respect to response times.~~

The contractor will prepare and implement a plan to keep shoulders clear on a more regular basis in areas of frequent pedestrian use (based on consultation with school districts, primary stakeholders and local communities).

~~d)~~ Other~~Miscellaneous~~

The Contractor will plow Overpasses and interchanges so as not to throw snow onto underlying Highways or railways.

The Contractor will keep Rest Areas, pull-outs, parking areas, Weigh Scales, and other areas designated by the Province open with the same priority as a Highway with the next lower class from adjacent Highway, e.g.: adjacent highway is class

"B"; maintain rest area as class"C". Designated "Chain-up" areas will be maintained to the same priority as the adjacent highway.

~~The Contractor will remove loose snow and ice from footpaths, walkways, bicycle paths and commonly used pedestrian accesses on Rights-Of-Way within 2 days after the Traveled Lanes have been cleared on that Highway.~~

C. NON-COMPLIANCE:

The Contractor shall be in Non-Compliance when: ~~the End Result Specifications have not been achieved. Without limiting the generality of the foregoing, the Contractor will be in Non-Compliance when:~~

1) The response times for the removal of slush or broken compact have been exceeded

2) The Maximum allowable accumulations have been exceeded

3) The response times for compact snow and ice have been exceeded

4) The response times for shoulder clearing have been exceeded

5) The Contractor has failed to maintain an accepted work procedure in the Quality Plan.

~~1) The Contractor has failed to develop and put into place a Winter Operational Plan that meets the End Result Specifications.~~
~~2) The Contractor has failed to deploy the necessary resources in accordance with the Operational Plan resulting in failure to meet End Result Specifications.~~
~~3) Conditions requiring corrective action exist and have not been observed and documented by the Contractor.~~
~~Conditions requiring corrective action exist, have been observed and documented by the Contractor but services were not performed effectively and/or within the response times outlined in section B.~~

B.C. MINISTRY OF TRANSPORTATION

Maintenance Standard

WINTER ABRASIVE AND CHEMICAL SNOW AND ICE CONTROL

A. OBJECTIVE

The Contractor will perform WINTER ABRASIVE AND CHEMICAL SNOW AND ICE CONTROL ~~as required~~ on Highways to facilitate the safe and efficient movement of traffic ~~restore surface which constitute or have the potential to create an unsafe condition for the traveling public or other Highway users by:~~

i. ~~restoring surface traction~~;
ii. ~~preventing the development of a bond between compact snow and the pavement surface on Class A & B Highways when an event is forecast;~~
iii. ~~notwithstanding ii above, restoring bare pavement condition in optimum time;~~

B. END RESULT SPECIFICATIONS

1. General Specification

I. When an event is forcast ,the Contractor will provide proactive winter maintenance services, by appling Winter Abrasive and/or Chemicals to minimize development of hazardous slippery surface conditions on highways and to facilitate the removal of snow, compact snow and ice, increasing Forecast monitoring and patrols. as necessary to support the appropriate pre-event deployment of resources.

II. When a non forecast event occurs that results in hazardous slippery conditions the contractor will immediately deploy the approprite resources as required.

III. The Contractor will restore surface traction in accordance with the response times set out below:

~~The Contractor will respond to Slippery conditions in accordance with the response times set out below notwithstanding~~

IV. ~~that~~ T~~t~~he Contractor will ensure patrol vehicles take action to restore surface traction by immediately applying Winter Abrasive and/or Chemicals when Hazardous Slippery conditions are encountered.

When snowfall, black ice, freezing rain, dropping or increasing temperatures are Forecast, the Contractor will commence the following operations immediately:

- Increase snow and weather monitoring;
- Increase Forecast monitoring;
- increase patrols;
- Notify/deploy resources;
- Communicate internally and externally;

The Contractor will utilise weather and forecast information, and other appropriate means to assist in determining which combination of anti icing, deicing and/or abrasive materials to use.

On Class A & B Highways, resources will be deployed at least 90 minutes in advance of a forecasted event and the Contractor will take appropriate measures to prevent a bond from occuring between the snow and the pavement surface on the Travelled Lanes.

On the Travelled Lanes of all other Highways, abrasive and/or chemical application will commence immediately, when the forecasted condition occurs.

i. The Contractor will give priority response to school zones, intersections, curves, hills, and Bridge Decks, accident sites and any other location on the Highway which could present a hazard to the traveling public and other Highway users.

ii.

When snowfall, black ice, freezing rain, dropping or increasing temperatures occur that are not forecast, the Contractor, will deploy resources immediately upon notification or detection of the condition.

DETAILED SPECIFICATIONS

The following table establishes the maximum response times within which the Contractor will have restored traction, commencing from initial detection by/or notification to the Contractor:

(i)	from beginning and or during snowfall event	hills over 5% gradient (one lane each direction)	60 minutes	90 minutes	2 h	4 h
		curves under 60 kilometres per	60 minutes	90 minutes	2 h	4 h
		school zones & intersections	90 minutes	2 h	3 h	6 h
		other locations	2 h	3 h	4 h	8 h
(ii)	freezing rain	all locations	2 h	3 h	5 h	6 h

(iii)	Black Ice	all locations	2 h	3 h	5 h	6 h
(iv)	after snowfall	all hills (all lanes)	5 h	8 h	24 h	2 d
		all curves	5 h	8 h	24 h	2 d
		all other locations	24 h	36 h	3 d	as required
(v)	when slippery surfaces are encountered during patrol	all locations	immediate application	immediate application	immediate application	immediate application

Notwithstanding the above table, the contractor will priorize such locations as accidents sites, bridge decks, where there is a local knowledge of areas which could present a hazard to the traveling public and other Highway users.

Legend
h – hours
d - days

The following table establishes the maximum response times within which the Contractor will have removed compact snow or ice remaining on paved Highway surfaces after snowfalls have ended and plowing operations on the Traveled Lanes have been completed.

Winter Highway Classification			
A	**B**	**C**	**D**
2 d	3 d	7 d	28 d

Legend
d – days

Note: Notwithstanding the above, for extended periods of extreme cold, implementation of a contractor plan that addresses unsafe conditions will be taken into consideration with respect to response time .

~~Notwithstanding the above, extended periods of extreme cold will be taken into consideration with respect to response times.~~

Materials

Chemicals used in snow and ice control must be accepted in writing by the Province for use on the Highways.

The maximum allowable particle size for Winter Abrasive materials, and the mean Gradation limits for these materials when tested according to ASTM Designations C136 and C117, is as follows:

		Winter Highway Classification		
		Class A & B	**All Class C and Class D paved only**	**All Class D gravel Highways**
(i)	Maximum particle size	12.5 mm	16 mm	19 mm
(ii)	metric screen size			
	19 mm	N/A	N/A	100
	16 mm	N/A	100	N/A
	12.5 mm	100	N/A	N/A
	9.5 mm	N/A	80-100	80-100
	4.75 mm	50-95	50-95	50-95
	2.36 mm	30-80	30-80	30-80
	0-600 mm	10-50	10-50	10-50
	0-300 mm	0-25	0-25	0-25
	0-075 mm	0-6	0-6	0-6

Note: The figures shown under section ~~B.1.a)(ii)~~ in the ~~above~~ above table represent the percent of material which passes that particular screen size.

De-icing chemicals – materials used for the perfomance of this standard shall be either on the reconized products list or must be accepted in writing by the Province for use on the highway

C. NON-COMPLIANCE

The contractor shall be in Non-Compliance when the End Result Specifications have not been achieved. Without limiting the generality of the foregoing, the Contractor shall be in Non-Compliance when:

1. When response time for hills over 5% gradient and curves under 60 kilometres per hour has been exceeded

2. When response times for school zones & intersections has been exceeded

3. When other listed response times havew been exceeded

~~1.~~4. The Contractor has failed to maintain an accepted work procedure in the Quality Plan

~~2. The Contractor has failed to develop and put into place a Winter Operational Plan the meets the End Result Specifications~~

~~3. The Contractor has failed to deploy the necessary resources in accordance with the Operational Plan resulting in failure to meet End Result Specifications~~

4. ~~Conditions requiring corrective action exist and have not been observed and documented by the Contractor~~
5. ~~Conditions requiring corrective action exist, have been observed and documented by the Contractor, but services were not performed effecvtively and /or within the response times.outlined in Section B.~~

B.C. MINISTRY OF TRANSPORTATION AND HIGHWAYS

Maintenance Standard

HIGHWAY PATROL

A. MAINTENANCE SERVICE OBJECTIVE

The Contractor will perform Highway patrol services as required to identify and attend to existing or changing conditions that have potential to effect the safe and efficient movement of traffic.
~~on Highways to:~~

~~a) identify and attend to any condition on the Highways that constitutes or has the potential to create an unsafe or hazardous condition to the traveling public and other Highway users;~~

~~b) identify and monitor changes to those Highways that will require or potentially require adjustment to the Contractor's maintenance plans or schedules; and~~

~~c) ensure the effective provision of the Maintenance Services in accordance with these Maintenance Standards;~~

~~within one or more of the following groups of maintenance activities and in accordance with this Maintenance Standard.~~

1. ~~Routine Maintenance Services~~

~~The Contractor will provide all patrol services as required on Highways.~~

~~2. Preventative Maintenance Services~~

~~There are no Preventative Maintenance Service requirements within this Maintenance Standard.~~

~~3. Annual Maintenance Services~~

~~There are no Annual Maintenance Service requirements within this Maintenance Standard.~~

B. ~~B.~~ End Result SPECIFICATIONS

General Specifications

~~1. Materials~~

1) Routine Maintenance Services

The Contractor will provide all patrol services as required on Highways.

~~1) 2. Performance Standards~~

2) Without limiting the provisions of any of the Maintenance Standards, the Contractor will review the following major Highway conditions while performing Highway patrol services:

a) ~~a)~~asphalt pavements and other hard surfaces for Pot-Holes, surface continuity and safety, ~~and effectiveness of patching methods~~;

~~b) b)~~gravel and dirt Highway surface for defiences such as pothole, washboard etc.~~s for grading and dust control requirements and effectiveness of programs;~~

~~c)~~b) _____

~~d)~~c) _____ ~~c)~~ Signs for damage, absence, loss of retro-reflectivity (requires night-time inspection) and location;

~~e)~~d) _____ ~~d)~~ ditches for blockages or lack of capacity to carry anticipated flow volumes, particularly in the fall for expected winter and spring run-off and again during the spring thaw period;

~~f)~~e) _____ ~~e)~~ culverts and other drainage appliances for restriction of flow at the inlet, damage to the appliance itself, and outlet erosion;

~~g)~~f) _____ ~~f)~~ roadsides for height and encroachment of grass or brush that reduces Sight Distance or trees and tree limbs that pose a hazard to the traveling public and other Highway users;

~~h) g)~~Traveled Lanes and Shoulder tops for ~~required~~ rock and Debris ~~removal;~~

~~i) h)~~winter Highway surface conditions for the need to provide traction ~~(Winter Abrasives) or to bare the pavement (plowing and De-Icing Chemical application);~~

~~j)~~g)~~i)~~Bridges and other Highway structures for damage, deficiencies of Wearing Surface, or other deficient conditions readily observed during patrols;

k)h) j) Roadsides, Traveled Lanes and Rest Areas for needed litter cleanup, graffiti removal and cleanliness;

l)i) k) fences which may be damaged;fences

m) l)Roadside or Median barrier which has blocked drains, been damaged or moved from its original position or which is unable to perform its designed function because of some other condition;

n)j)

o) m)accidents where the Highway condition iswas considered a contributing factor and for all fatalities or serious injury accidents;

p)k)

n)frost probes will be read and reported by location, date and time as and when directed by the Province;

q)l)o)Highway Shoulders for which are smooth stable and free draining their integrity and a provide a smooth transition from edge of pavement to Shoulders;

r)m) p) water on road affecting or having the potential to effect safe and efficient movement of traffic;

s)n) q) pavement markings and surface and barrier reflectors for required cleaning or replacement;

t) r)Highway Shoulders for unimpeded drainage from the road surface;

u) s)damaged or non-functioning overhead light standards, traffic signal lights and other Highway fixtures; and

v)o)

w)p) t) curbs and gutters for damage or drainage obstructions.

3. Methods

4. Miscellaneous

a)Inspection of conditions in order to schedule and perform works is implicit in each Maintenance Standard.

x)q) The Contractor will perform certain operational actions, such as the removal of rocks and Debris from the Traveled Lanes and Shoulder tops, during During Highway patrol. The the Contractor will take appropriate actions and to ensure that no unsafe or hazardous situations will be left unattended.are attended.

~~y)~~r)~~c)~~The Contractor will report to the Province any conditions which affect the Highway in performing its designed function but which are not specifically identified by this Agreement or these Maintenance Standards commencing immediately upon detection by or notification to the Contractor.

~~z)~~s) ~~d)~~ The Contractor will provide the Province with a report of all rock fall onto the Traveled.0 Lanes and Shoulder tops which has occurred during the previous month within 7 days of the end of each month and in a format as directed by the Province.

~~e)The Contractor will, within 7 days of the end of each month, provide the Province with a report of inspections completed during the previous month, noting all conditions not in accordance with these Maintenance Standards and the corrective works planned by the Contractor.~~

~~C. SCHEDULING~~Detailed Specifications

~~1. Routine Maintenance Services~~

The Contractor will complete patrols of the Highways within the maximum periods of time listed in the following table:

a) Summer Highway Classification

	1 & 2	3	4	5	6 & 7
during periods of high water flow	2 h	4 h	8 h	16 h	32 h

Legend
h - hours

b) Winter Highway Classification

_	A	B	C	D
winter patrols (when freezing temperatures and/or snowfall are present or are anticipated)	4 h	8 h	16 h	24 h

Legend
h - hours

c) Summer Highway Classification	1 & 2	3	4	5	6 & 7

at all times when conditions a) and b) are not applicable	24 h	2 d	7 d	14 d	21 d

Legend
h - hours
d - days

d)The Contractor will immediately advise the Province by radio communication of situations warranting Highway condition notification to highway users~~the media~~.

e) The Contractor will patrol conditions not specified in General Specifications ~~B.2~~ that form part of the Highways at least once per year.

~~**2. Preventative Maintenance Services**~~

~~Not applicable.~~

~~B. 3. Annual Maintenance Services~~
C. NON-COMPLIANCE

1) The contractor shall be in Non-Compliance when the End Result Specifications have not been achieved. Without limiting the generality of the foregoing, the Contractor shall be in Non-Compliance when:

2) Failure to attend and identify to existing or changing conditions that have potential to effect the safe and efficient movement of traffic during patrol

3) Failure to meet response time as established within this standard

4) The Contractor has failed to maintain an accepted work procedure in the Quality Plan.

5) Conditions requiring corrective action exist and have not been observed and documented by the Contractor.
~~Not applicable.~~

winter standard revisions

From:	Freer, Geoff TRAN:EX s.15
To:	Ogden, Bill TRAN:EX <Bill.Ogden@gems8.gov.bc.ca>, Lachmuth, Grant TRAN:EX <Grant.Lachmuth@gems3.gov.bc.ca>, Pharand-Fraser, Nicole TRAN:EX <Nicole.PharandFraser@gems4.gov.bc.ca>, Newhouse, John TRAN:EX <John.Newhouse@gems1.gov.bc.ca>, McKinley, Shawn TRAN:EX <Shawn.McKinley@gems3.gov.bc.ca>, Minshall, Mike TRAN:EX <Mike.Minshall@gems8.gov.bc.ca>, Marshall, Ron TRAN:EX <Ron.Marshall@gems7.gov.bc.ca>
Cc:	Freer, Geoff TRAN:EX <Geoff.Freer@gems3.gov.bc.ca>, Duncan, Dave TRAN:EX <Dave.Duncan@gems6.gov.bc.ca>, Buckle, Jon TRAN:EX <Jon.Buckle@gems4.gov.bc.ca>
Sent:	November 24, 2002 9:23:59 PM PST
Attachments:	Highway Patrol Nov 24.doc, Snow removal Draft Nov24.doc, Abravises Chemicals Nov 24.doc

Shawn et al...some changes to try and focus on some of the critical safety issues we are trying to emphasize with the next round; I did not worry about word smithing but rather concepts. I did not spend any time on grading....for discussion and consideration...

You may remember in one of the early versions we came to the conclusion that in the case of these winter safety issues we needed to specify "what" we wanted to see for actions but not necessarily how....so these may be more detailed than most standards....

Geoff

B.C. MINISTRY OF TRANSPORTATION ~~AND HIGHWAYS~~

Maintenance Standard

HIGHWAY PATROL

1. ~~A. MAINTENANCE SERVICE~~ OBJECTIVE

~~The Contractor will perform Highway pavement patching as required on Highways to:~~
The Contractor will perform Highway Patrol services as required to identify and attend to existing or changing Highway conditions that constitute or have the potential to create unsafe conditions. The Contractor will comply with provisions defined within the Highway Act and other enactments and regulations and will ensure the safe and efficient movement of traffic.~~traveling~~

~~b) seal pavement from moisture penetration;~~

~~c) prepare and strengthen a paved Highway surface for an Overlay or pavement surface treatment; and~~

~~d) extend pavement life;~~

~~within one or more of the following groups of maintenance activities and in accordance with this Maintenance Standard.~~

2. END RESULT SPECIFICATIONS

General Specifications

i. The Contractor will provide all patrol services as required on the Highways.

ii. Without limiting the provisions of any of the Maintenance Standards, the Contractor will review the following major Highway conditions while performing Highway patrol services:

a) asphalt pavements and other hard surfaces for Pot-Holes for surface continuity and safety;

b) gravel and dirt on the Highway surface for defiences such as, but not limited to, Pot-Holes and Washboarding;

c) Signs for damage, absence, loss of retro-reflectivity (requiring night-time inspection) and location;

d) ditches for blockages and/or for lack of capacity to carry anticipated flow volumes, particularly in the fall for expected winter and spring run-off and again during the spring thaw period;

e) culverts and other drainage appliances for restriction of flow at the inlet, damage to the appliance itself and outlet erosion;

f) Roadsides for encroachment of grass or brush that reduce Sight Distance and/or for trees and tree limbs that pose a hazard to Highway users;

g) Travelled Lanes and Shoulders for rock and Debris;

h) winter Highway surface conditions to provide required traction for the safety of Highway users;

i) Bridges and other Highway structures for damage, deficiencies of Wearing Surface and/or other deficient conditions readily observed during patrols;

j) Roadsides, Travelled Lanes and Rest Areas for litter, graffiti and cleanliness;

k) Roadsides or Median barriers which are unable to perform their designed function;

l) Accidents where the Highway condition is considered a contributing factor;

m) Highway Shoulders which are smooth stable and free-draining to provide a smooth transition from edge of pavement to Shoulders;

n) water on road having the potential to create unsafe conditions for Highway users and impeding the efficient movement of traffic;

o) pavement markings and surface and barrier reflectors requiring cleaning or replacement;

p) damaged or non-functioning overhead light standards, traffic signal lights and other Highway fixtures; and

q) curbs and gutters for damage or drainage obstructions.

iii. Miscellaneous specifications:

a) During Highway Patrol, the Contractor will take appropriate actions to protect Highway users from situations that constitute or have the potential to create unsafe or hazardous conditions.

b) Immediately upon detection by or notification to the Contractor, the Contractor will report to the Province any conditions which may adversely affect the Highway in performing its designed function but which may not be specifically identified by this Agreement or the Maintenance Standards.

c) Within 7 days following the end of each month, and in a format as directed by the Province, the Contractor will provide the Province with a report of all rock falls onto the Travelled.Lanes and Shoulder tops which have occurred during the preceding month.

3. DETAILED SPECIFICATIONS

i. The Contractor will complete patrols of the Highways within the maximum time periods listed in the following tables:

a) Summer Highway Classification

	1 & 2	3	4	5	6 & 7
during periods of high water flow	2 h	4 h	8 h	16 h	32 h

Legend
h - hours

b) Winter Highway Classification

	A	B	C	D
winter patrols (when freezing temperatures, freezing rain, black ice and/or snowfall are present or are anticipated/forecast)	4 h	8 h	16 h	24 h

Legend
h - hours

c) Summer Highway Classification

	1 & 2	3	4	5	6 & 7
at all times when conditions a) and b) are not applicable	24 h	2 d	7 d	14 d	21 d

Legend
h - hours
d - days

~~ii.~~ The Contractor will immediately advise the Province by radio communication of situations warranting Highway condition notifications to Highway users~~.~~

ii. The Contractor will immediately advise local media and other public contacts regarding conditions and situations at all times as required by the Province (as per the accepted Quality System Plan).

iii. The Contractor will report to the Province at least once per year, any other Highway Patrol conditions detected but not specified in General Specifications in Section 2.

4. NON-COMPLIANCE

The Contractor will be in Non-Compliance when the End Result Specifications and response time schedules detailed in Section 2 have not been achieved.

Without limiting the generality of the foregoing, specific indications of Non-Compliance include, but are not limited to:

i. failure to attend to and identify existing or changing conditions that constitute or have the potential to create unsafe conditions and/or to obstruct efficient movement of traffic;

ii. failure to immediately notify the Province, media and other required contacts regarding road and weather conditions, situations and emergencies.

~~ii.~~iii. failure to maintain accepted work procedures in the Quality Plan; and

~~iii.~~iv. conditions requiring corrective action exist but have not been detected, observed and documented by the Contractor.

B.C. MINISTRY OF TRANSPORTATION

Maintenance Standard

HIGHWAY SNOW REMOVAL

A. OBJECTIVE

The Contractor will perform HIGHWAY SNOW REMOVAL on Highways as required to remove loose snow, slush and compact snow, to ensure the safe and efficient movement of traffic.

B. END-RESULT SPECIFICATIONS

1. General Specifications

The Contractor will ensure that snow accumulations remain below the maximum allowable accumulations, and loose slush and broken compact is removed to the full width of the Traveled Lanes consistent with the Highway Classification as set out in this standard.

When snowfall and/or conditions leading to loose slush are forecast, the Contractor will be proactive by commencing such operations as:

- Increasing snow and weather observations and monitoring
- Increasing forecast monitoring
- increasing patrols
- Notifying and deploying resources in advance of event as required
- Communicate internally and externally regarding forecast and actual weather and road conditions

When snowfall occurs that is not forecast, the Contractor, immediately upon notification or detection of snowfall and/or loose slush will:

- Notify/deploy resources as required
- commence removal of snow and slush as required

DETAILED SPECIFICATIONS

(i) The Contractor will use snow and weather observations, formal weather forecasts and local observations and forecasts to ensure resources are deployed to appropriate locations (eg: mountain passes, known frequent snowfall areas and blowing snow areas) in advance of a forecasted snowfall or other precipitation event starting.

(ii) The Contractor will complete surface plowing to remove loose snow , slush and compact snow from highway surfaces on all Traveled Lanes on Winter Class A, B, and C Highways within 2 days of the last measurable snowfall. Class D Highways shall be plowed within 2 days when the accumulation exceeds 5cm

(iii) Subject to section (i) above, the following table establishes the maximum allowable total accumulations on each Highway Traveled Lane:

Winter Highway Classification	Maximum Allowable Accumulation (cm)		
	One Lane Each Direction	Second Lanes	All Other Lanes
A	4.0 cm	6.0 cm	15.0 cm
B	4.0 cm	6.0 cm	20.0 cm
C	15.0 cm	20.0 cm	n/a
D	25.0 cm	n/a	n/a
E	30.0 cm	n/a	n/a

NOTE: The removal of slush creating unsafe conditions is critical to traffic safety. Not withstanding the above table, removal of slush and or broken compact which has the potential to create unsafe conditions shall be accomplished within the timeframes in the following table

Winter Highway Classification			
A	B	C	D
60 min	90 min	4 hours	n/a

A. The Contractor will develop a plan to be accepted by the Province that considers key commuter, school bus and industrial routes in consultation with local stakeholders, including but not limited to the local industries (forestry, mining, oil and gas), the RCMP, local and regional governments to ensure optimum service to commuters and local industry.

*B. Notwithstanding the foregoing maximum allowable accumulation table, consideration shall be given during periods of extreme snowfall , until such time as all roads in the respective area are within maximum allowable accumulations. The Contractor plan must take into account local climatic and geographic conditions.******

b) compacted snow or ice on paved surfaces

The following table establishes the maximum periods of time from the end of a measurable snowfall within which the Contractor will remove compacted snow or ice from all travelled lanes with paved Highway surfaces:

Winter Highway Classification			
A	**B**	**C**	**D**
2 d	3 d	7 d	28 d

Legend
d – days

Note: Notwithstanding the above, for extended periods of extreme cold, implementation of a contractor plan that addresses unsafe conditions such as but not limited to roughness and slippery surfaces will be taken into consideration with respect to response time .

c) Shoulder clearing

The following table establishes the maximum periods of time from the end of measurable snowfall within which the Contractor will have pushed snow and ice back beyond the Shoulder edge:

Winter Highway Classification			
A	**B**	**C**	**D**
4 d	7 d	7 d	28 d

Legend
d – days

Note1: Notwithstanding the above, on Class A and B Highways at all Superelevated curves or locations where the Shoulder edge is higher than the Travelled Lanes, the Contractor will have pushed snow and ice fully back beyond the Shoulder edge within two days of the end of measurable snowfall to prevent snowmelt drainage onto the pavement.

The contractor will prepare and implement a plan to keep shoulders clear on a more regular basis in areas of frequent pedestrian use (based on consultation with school districts, stakeholders and local communities).

Other
The Contractor will plow Overpasses and interchanges so as not to throw snow onto underlying Highways or railways.

The Contractor will keep Rest Areas, pull-outs, parking areas, Weigh Scales, and other areas designated by the Province open with the same priority as a Highway with the next lower class from adjacent Highway, e.g.: adjacent highway is class “B”; maintain rest area as class”C”. Designated "Chain-up" areas will be maintained to the same priority as the adjacent highway.

C. NON-COMPLIANCE:

The Contractor shall be in Non-Compliance when:

1) Resources are not deployed and in place at critical and historical locations (as identified in the Contractor Quality Plan and/or as forecasted) in advance of forecasted snowfall and loose slush events
2) Snow, weather and forecast observations and monitoring have not been used to deploy and adjust resources prior to snowfall events
3) The response times for the removal of slush or broken compact have been exceeded
4) The Maximum allowable accumulations have been exceeded
5) The response times for compact snow and ice have been exceeded
6) The response times for shoulder clearing have been exceeded
7) The Contractor has failed to maintain an accepted work procedure in the Quality Plan.

B.C. MINISTRY OF TRANSPORTATION

Maintenance Standard

WINTER ABRASIVE AND CHEMICAL SNOW AND ICE CONTROL

A. OBJECTIVE

The Contractor will perform WINTER ABRASIVE AND CHEMICAL SNOW AND ICE CONTROL on Highways to facilitate the safe and efficient movement of traffic
i. ;

B. END RESULT SPECIFICATIONS

1. General Specification

I. When winter conditions such as snowfall, black ice, freezing rain, increasing and decreasing temperatures in ranges important to road conditions and traffic safety are forecast ,the Contractor will provide proactive winter maintenance services, by applying Winter Abrasive and/or Chemicals to minimize development of hazardous slippery surface conditions on highways and to facilitate the removal of snow, compact snow and ice,. as necessary to support the appropriate pre-event deployment of resources to critical locations prior to the occurrence of the forecasted event.

II. When a non forecast event occurs that results in hazardous slippery conditions the contractor will immediately deploy the approprite resources as required.

III. When snowfall, black ice, freezing rain, dropping or increasing temperatures in ranges important to road conditions and traffic safety are forecast or occur, the Contractor will commence the following operations immediately:
-increase snow and weather monitoring and local forecasting
–increase frequency of forecast monitoring
–increase patrols
–notify and deploy resources
–communicate internally and externally

IV. The Contractor will utilise weather and forecast information, and other appropriate means to assist in determining which combination of anti icing, deicing and/or abrasive materials and operational activities to use.

V. The Contractor will restore surface traction in accordance with the response times set out below:

VI. The Contractor will ensure patrol vehicles take action to restore surface traction by immediately applying Winter Abrasive and/or Chemicals when Hazardous Slippery conditions are encountered.

VII. Resources will be deployed to appropriate key locations (as identified in the Contractor Quality Plan and the forecast) at least 90 minutes in advance of a forecast winter conditions such as snowfall, black ice, freezing rain or other temperature conditions important to road and traffic safety.

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DETAILED SPECIFICATIONS

The following table establishes the maximum response times within which the Contractor will have resources on site based on forecasts, or have restored traction, commencing from initial detection by/or notification to the Contractor:

(i)	Resources on site from time of forecast of snowfall, freezing rain, black ice and other hazard condition	Key locations identified in Contractor quality plan or the current forecast (eg: mountain passes, historical snowfall start and black ice areas)	60 minutes	90 minutes	2 h	4 h
(i)	from beginning and or during snowfall event	hills over 5% gradient (one lane each direction)	60 minutes	90 minutes	2 h	4 h
		curves under 60 kilometres per	60 minutes	90 minutes	2 h	4 h
		school zones & intersections	90 minutes	2 h	3 h	6 h
		other locations	2 h	3 h	4 h	8 h
(ii)	freezing rain	all locations	2 h	3 h	5 h	6 h
(iii)	Black Ice	all locations	2 h	3 h	5 h	6 h
(iv)	after snowfall	all hills (all lanes)	5 h	8 h	24 h	2 d
		all curves	5 h	8 h	24 h	2 d
		all other locations	24 h	36 h	3 d	as required
(v)	when slippery surfaces are encountered during patrol	all locations	immediate application	immediate application	immediate application	immediate application

Notwithstanding the above table, the contractor will priorize such locations as mountain passes, black ice areas, accident sites, bridge decks and other locations

where there is a local knowledge of areas which could present a hazard to the traveling public and other Highway users.

Legend
h – hours
d - days

The following table establishes the maximum response times within which the Contractor will have removed compact snow or ice remaining on paved Highway surfaces after snowfalls have ended and plowing operations on the Traveled Lanes have been completed.

Winter Highway Classification			
A	**B**	**C**	**D**
2 d	3 d	7 d	28 d

Legend
d – days

Note: Notwithstanding the above, for extended periods of extreme cold, implementation of a contractor plan that addresses unsafe conditions will be taken into consideration with respect to response time .

Materials

Chemicals used in snow and ice control must be accepted in writing by the Province for use on the Highways.

The maximum allowable particle size for Winter Abrasive materials, and the mean Gradation limits for these materials when tested according to ASTM Designations C136 and C117, is as follows:

		Winter Highway Classification		
		Class A & B	**All Class C and Class D paved only**	**All Class D gravel Highways**
(i)	Maximum particle size	12.5 mm	16 mm	19 mm
(ii)	metric screen size			
	19 mm	N/A	N/A	100
	16 mm	N/A	100	N/A
	12.5 mm	100	N/A	N/A
	9.5 mm	N/A	80-100	80-100

4.75 mm	50-95	50-95	50-95
2.36 mm	30-80	30-80	30-80
0-600 mm	10-50	10-50	10-50
0-300 mm	0-25	0-25	0-25
0-075 mm	0-6	0-6	0-6

Note: The figures shown under section in the above table represent the percent of material which passes that particular screen size.

De-icing chemicals – materials used for the perfomance of this standard shall be either on the reconized products list or must be accepted in writing by the Province for use on the highway

C. NON-COMPLIANCE

The contractor shall be in Non-Compliance when the End Result Specifications have not been achieved. Without limiting the generality of the foregoing, the Contractor shall be in Non-Compliance when:

1. The Contractor has failed to maintain an accepted work procedure in the Quality Plan
2. The Contractor has failed to develop and put into place an approved Winter Operational Plan that meets the End Result Specifications.
3. The Contractor has failed to deploy the necessary resources…..
4. Conditions requiring corrective action exist…..
5. When conditions requiring corrective action have been forecast and resources have not been deployed and located appropriately in advance of the condition occurring
6. Snow, weather and forecast information and observations have not been completed, analyzed and appropriate actions taken…
7. The Contractor has failed to develop and implement an accepted operational plan developed in consideration of industrial traffic, school bus and commuter routes and timing.
8. When response time for hills over 5% gradient and curves under 60 kilometres per hour has been exceeded
9. When response times for school zones & intersections has been exceeded
10. When other listed response times havew been exceeded
11. The Contractor has failed to maintain an accepted work procedure in the Quality Plan

Draft winter standards

From: Newhouse, John TRAN:EX
s.15
To: Dyble, John TRAN:EX <John.Dyble@gems6.gov.bc.ca>
Sent: February 6, 2003 1:21:39 PM PST
Attachments: 3-300 Highway Snow Removal Revision Feb 3, 2003.doc, 3-310 Winter Abrasive Chemicals Specification Feb 3, 2003.doc

John

As discussed here are the draft winter standards with Geoff's and Jon's ideas inserted (lined). We still need to word smith them and turn the lawyers loose on them.

But they will give you a good sense what they will look like

John Newhouse
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B.C. MINISTRY OF TRANSPORTATION

Maintenance Specification Chapter 3-300

HIGHWAY SNOW REMOVAL

1. OBJECTIVE

The Contractor will perform snow removal on Highways as required to remove loose snow, slush and compact snow; to protect Highway users from situations that constitute or have the potential to create unsafe driving conditions; and to ensure the safe and efficient movement of traffic.

2. GENERAL PERFORMANCE SPECIFICATIONS

2.1 Routine Maintenance Services

All services for this Maintenance Specification are routine.

2.2 Quantified Maintenance Services

Not applicable to this Maintenance Specification.

3. DETAILED PERFORMANCE SPECIFICATIONS

3.1 Routine Maintenance Services

The Contractor will:

a) ensure that snow accumulations on the full width of the Travelled Lanes remain below the Maximum Allowable Accumulations shown on the table in Section 3.1.;

b) proactively commence such operations as the following when snowfall is forecast:

i) increase snow and weather observations and monitoring;

ii) increase weather forecast monitoring;

iii) increase local road condition and weather forecasting extrapolated from observations and broader forecasts

~~iii)~~iv) increase patrols;

~~iv)~~v) notify and deploy resources in advance of an event as required. Resources should be deployed and located to key geographic areas (eg: mountain passes, higher elevation, known frequent snowfall and/or blowing snow areas) prior to the occurrence of the forecast weather event in order that snow and slush removal can commence early in areas most impacted by snow and slush;

~~v)~~vi) communicate internally and externally of actions taken; and

~~vi)~~vii) acquire and review current weather station information.

c) immediately upon detection or notification of unforeseen snowfall, undertake the following actions:

i) notify/deploy resources as required; and

ii) commence removal of snow and slush;

d) develop a detailed plan to ensure optimum proactive service to Highway Users and considering key commuter, school bus and industrial routes and in consultation with local stakeholders including but not limited to, ~~the~~ local industries (forestry, mining, oil and gas), the RCMP, local and regional governments. These key routes are to receive special attention and monitoring prior to, and during time periods key to highway users and local stakeholders;

e) during extended periods of extreme cold, implement a plan to address unsafe conditions such as, but not limited to, ice on the Travelled Lanes and taking into consideration resulting melt and refreeze issues;

f) prepare and implement a plan to keep Shoulders clear on a more regular basis in areas of frequent pedestrian use and in consultation with school districts, primary stakeholders and local communities;

g) plow Overpasses and interchanges without throwing snow onto underlying Highways or railways; and

h) keep open Rest Areas, pull-outs, parking areas, Weigh Scales, and other areas designated by the Province with the same priority as a Highway with the next lower class from adjacent Highway (e.g., adjacent highway is class “B” and maintenance of the Rest Area is Class”C”) and designated "Chain-up" areas with the same priority as the adjacent highway.

3.1.1 Maximum Response Times

a) The Contractor will complete surface plowing to remove loose snow, slush and compact snow from highway surfaces on all Travelled Lanes on Winter Class A, B, and C Highways within 2 days of the last measurable snowfall. Class D Highways shall be plowed within 2 days when the accumulation exceeds 5 cm. Early attention will be given to areas known to be impacted first by snowfall and slush weather events (eg: mountain passes, higher elevation, known frequent snowfall and blowing snow areas),

b) The table below establishes the total Maximum Allowable Accumulations on each Highway Travelled Lane.

Winter Highway Classification	Maximum Allowable Accumulation (cm)		
	One Lane Each Direction	Second Lanes	All Other Lanes
A	4.0 cm	6.0 cm	15.0 cm
B	4.0 cm	6.0 cm	20.0 cm
C	15.0 cm	20.0 cm	n/a
D	25.0 cm	n/a	n/a
E	30.0 cm	n/a	n/a

c) Notwithstanding the foregoing Maximum Allowable Accumulation in the table above, removal of slush and or broken compact snow which has the potential to create unsafe conditions for Highway Users will be accomplished within the following timeframes:

Winter Highway Classification			
A	B	C	D
60 min	90 min	4 hours	n/a

d) The following table establishes the Maximum Response Times from the end of a measurable snowfall within which the Contractor will remove compacted snow or ice from all travelled lanes with paved Highway surfaces:

Winter Highway Classification			
A	B	C	D
2 d	3 d	7 d	28 d

Legend
d – days

e) Notwithstanding the above, during extended periods of extreme cold, implementation of a Contractor plan to addresses unsafe conditions such as, but not limited to, roughness and slippery surfaces, will be taken into consideration when addressing Maximum Response Times.

f) The following table establishes the Maximum Response Times from the end of measurable snowfall within which the Contractor will have pushed snow and ice back beyond the Shoulder edge:

Winter Highway Classification			
A	**B**	**C**	**D**
4 d	7 d	7 d	28 d

Legend
d – days

g) Notwithstanding the above, on Class A and B Highways at all Superelevated curves or locations where the Shoulder edge is higher than the Travelled Lanes, the Contractor will push snow and ice fully back beyond the Shoulder edge within two days of the end of measurable snowfall to prevent snowmelt drainage onto the Travelled Lanes.

3.2 Quantified Maintenance Services

Not applicable to this Maintenance Specification.

3.2.1 Maximum Response Times

Not applicable to this Maintenance Specification.

3.3 Materials

Not applicable to this Maintenance Specification.

3.4 Miscellaneous

Not applicable to this Maintenance Specification.

4. WARRANTY

Not applicable to this Maintenance Specification.

BC MINISTRY OF TRANSPORTATION

Maintenance Specification 3-310

WINTER ABRASIVE AND CHEMICAL SNOW AND ICE CONTROL

1. OBJECTIVE

The Contractor will undertake winter abrasive applications and chemical snow and ice control applications on Highways to facilitate the safe and efficient movement of traffic in winter conditions.

2. GENERAL PERFORMANCE SPECIFICATIONS

2.1. Routine Maintenance Services

All Maintenance Services for this specification are routine

2.2. Quantified Maintenance Services

Not applicable to this Maintenance Specification

3. DETAILED PERFORMANCE SPECIFICATIONS

3.1. Routine Maintenance Services

The Contractor will:

a) ~~a)~~provide proactive winter maintenance services, in advance and during a forecast weather event, whenever a weather event is forecast by applying Winter Abrasive and/or Chemicals to minimize development of hazardous slippery surface conditions on Highways and to facilitate the removal of snow, compact snow and ice. A weather event includes any meteorological condition that promotes or permits the development of hazardous pavement or gravel surface conditions that require some type of abrasive, deicing chemical application, and/or snow removal procedure to maintain or reinstate safe winter driving conditions;

b) ~~b)~~increase road temperature and condition f~~F~~orecast monitoring as provided through Road Weather Information Systems, other available forecast and information systems, and patrols as necessary, to support the appropriate pre-event deployment of resources;

i) notify and deploy resources in advance of an event as required. Resources should be deployed and located to key geographic areas (eg: mountain passes, higher elevation, known frequent snowfall and/or blowing snow, black ice areas) prior to the occurrence of the forecast weather event in order that winter abrasive and chemical snow and ice control can commence prior to, and during the anticipated weather and surface condition;

c)

d) acquire and utilize Road Temperature and Condition (RTC) Forecasts to determine if/and/or when a weather/meteorological event could develop that could reduce surface traction on the highway surface and respond by pre-treating the highway surface with abrasive and /or anti-icing chemicals in advance of a forecast event;

e) utilize Road Weather Station data through an approved Road Weather Information System (RWIS) to monitor existing and developing conditions in order to better time the appropriate application of abrasives and/or chemicals in advance of the event;

f) utilize Road Weather Station data to determine if previous anit-icing chemical application residuals are sufficient to maintain pre-weather event surface traction when an event is forecast and to determine if and/or when applications of additional anti-icing or de-icing chemicals are required to maintain surface traction;

~~a)~~g) utilize other methodologies that may be available, such as Thermal Mapping, in conjunction with RTC Forecast and other road and weather forecast services, to better identify the locations and number of areas that may develop hazardous surface conditions as a result of a meteorological/weather event.

c) immediately, upon detection or notification, deploy resources when a non-forecast event occurs that results in hazardous slippery conditions for Highway Users; and

d). immediately restore surface traction by applying Winter Abrasive and/or Chemicals when hazardous slippery conditions are encountered.

3.1.1. Maximum Response Times

The Contractor will:

a~~)~~)deploy resources to appropriate key locations (as identified in the Contractor Quality System and the road and weather condition forecast) at least 60 minutes in advance of a forecast weather and

road condition such as snowfall, black ice, freezing rain or other surface condition likely to create hazardous conditions.

\

b) restore traction within the maximum Response Times specified in the following table:

	Condition	Location	Maximum Response Times			
(i)	From beginning and or during snowfall event	hills over 5% gradient (one lane each direction)	60 minutes	90 minutes	2 h	4 h
		curves under 60 kilometres per	60 minutes	90 minutes	2 h	4 h
		school zones & intersections	90 minutes	2 h	3 h	6 h
		other locations	2 h	3 h	4 h	8 h
(ii)	Freezing rain	all locations	2 h	3 h	5 h	6 h
(iii)	Black Ice	all locations	2 h	3 h	5 h	6 h
(iv)	After snowfall	all hills (all lanes)	5 h	8 h	24 h	2 d
		all curves	5 h	8 h	24 h	2 d
		all other locations	24 h	36 h	3 d	as required
(v)	When slippery surfaces are encountered during patrol	all locations	immediate application	immediate application	immediate application	immediate application

Legend
h – hours
d – days

b) prioritise such locations as mountain passes, higher elevation areas, areas known for the formation of black ice, accident sites, Bridge Decks and where there is a local knowledge of areas which constitute or have the potential to create unsafe conditions for Highway Users, notwithstanding the above table;

c) remove compact snow or ice remaining on the paved Highway surfaces after snowfalls have ended and plowing operations on the Travelled Lanes have been completed, within the Maximum Response Times specified in the table below:

Winter Highway Classification			
A	**B**	**C**	**D**
2 days	3 days	7 days	28 days

d) prepare and implement a plan that addresses unsafe conditions during periods of extreme cold, notwithstanding the Maximum Response Times in the table above.

3.2. Quantified Maintenance Services

Not applicable to this Maintenance Specification.

3.2.1. Maximum Response Times

Not applicable to this Maintenance Specification.

3.3 Materials

The Contractor will:

a) use materials and chemicals used in snow and ice control from the recognized products list or as accepted in writing by the Province for use on the Highways;

b) use materials in accordance with the maximum allowable particle size for Winter Abrasive materials and the mean Gradation limits when tested according to ASTM Designations C136 and C117, and as shown on the following table:

		Winter Highway Classification		
		Class A & B	**All Class C and Class D paved only**	**All Class D gravel Highways**
(i)	Maximum particle size	12.5 mm	16 mm	19 mm
(ii)	metric screen size			
	19 mm	N/A	N/A	100
	16 mm	N/A	100	N/A
	12.5 mm	100	N/A	N/A
	9.5 mm	N/A	80-100	80-100
	4.75 mm	50-95	50-95	50-95
	2.36 mm	30-80	30-80	30-80
	0-600 mm	10-50	10-50	10-50
	0-300 mm	0-25	0-25	0-25
	0-075 mm	0-6	0-6	0-6

Note: The figures shown in the above table represent the percent of material which passes that particular screen size.

3.4 Miscellaneous

Not applicable to this Maintenance Specification.

5. 4. WARRANTY

Not applicable to this Maintenance Specification.

Page 080 of 178 to/à Page 081 of 178

Withheld pursuant to/removed as

s.13 ; s.14 ; s.15

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Victoria, British Columbia,
Canada V8W 2E1
Ph. (250) 385-1411
Fax (250) 413-3300
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winter standards 2003-03-12

From:	Newhouse, John TRAN:EX s.15
To:	Buckle, Jon TRAN:EX <Jon.Buckle@gems4.gov.bc.ca>, Cooper, Tracy TRAN:EX <Tracy.Cooper@gems3.gov.bc.ca>, Keiser, Wayne TRAN:EX <Wayne.Keiser@gems9.gov.bc.ca>, Freer, Geoff TRAN:EX <Geoff.Freer@gems3.gov.bc.ca>
Cc:	Fredrickson, Reg TRAN:EX <Reg.Fredrickson@gems7.gov.bc.ca>, Pharand-Fraser, Nicole TRAN:EX <Nicole.PharandFraser@gems4.gov.bc.ca>, Mackay, Bruce TRAN:EX <Bruce.Mackay@gems8.gov.bc.ca>
Sent:	March 12, 2003 4:05:16 PM PST
Attachments:	3300 Snow Removal Clean March 10, 2003.doc, 3310 Winter Abrasive Chemical - Clean March 10-2003.doc

attached are revised winter standards. We have taken out the Kevin Higgins clause but inserted another clause with different words. We did this because we realised after the fact that clause was in R4 standards and we can't reduce standards.

We also changed the notwithstanding clause with slush, changing ... removing slush...to plowing slush. removing was too definite whereas plowing recognises that some slush may remain after the plow has passed. We also changed class c from 4 hrs to 6 hrs.

We are planning to send out an amendment tomorrow Thursday with these attached. Any comments

Nicole is correcting minor references.

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B.C. MINISTRY OF TRANSPORTATION

Maintenance Specification Chapter 3-300

HIGHWAY SNOW REMOVAL

1. OBJECTIVE

To remove loose snow, slush and compact snow; to protect Highway Users from situations that are unsafe; to ensure the safe and efficient movement of traffic and to ensure that the Contractor utilizes and deploys, those resources that are required to comply with this Specification, in a manner which anticipates and responds in advance of a snowfall.

2. GENERAL PERFOMANCE SPECIFICATIONS

2.1 Routine Maintenance Services

All services for this Maintenance Specification are Routine.

2.2 Quantified Maintenance Services

Not applicable to this Maintenance Specification.

3. DETAILED PERFORMANCE SPECIFICATIONS

3.1 Routine Maintenance Services

The Contractor must:

a) remove snow on the full width of the Travelled Lanes to ensure that accumulations remain below the Maximum Allowable Accumulations shown on the table in Section 3.1.1.a)i);

b) when snowfall is forecast, proactively:

i) increase snow and weather observations, monitoring and review current weather station information;

ii) increase weather forecast monitoring;

iii) extrapolate from observations and broader weather forecasts to anticipate local road conditions;

iv) increase patrols as outlined in the Maintenance Specification for *Highway Patrol;*

v) notify and deploy resources in advance, which are sufficient to respond to anticipated snowfall. Resources must be deployed to key geographic areas (e.g.: mountain passes, higher elevations, known frequent snowfall and/or blowing snow areas) prior to the occurrence of the anticipated snowfall to ensure that snow and slush removal will commence early in severely impacted areas;

vi) communicate internally and externally of actions to be taken; and

c) in response to unforeseen snowfall:

i) notify/deploy resources; and

ii) commence removal of snow and slush in accordance with the time frames outlined in section 3.1.1 b);

d) ensure optimum proactive service to local stakeholders including but not limited to, local industries (forestry, mining, oil and gas), the RCMP, local and regional governments, key commuters and school buses. The routes used by these stakeholders are to receive priority service, in the allocation of resources to their road classifications, and specific to their individual needs;

e) during extended periods of extreme cold, remedy unsafe conditions such as, but not limited to, ice on the Travelled Lanes and those conditions arising from melt and refreeze situations;

f) keep Shoulders clear more frequently in areas of high pedestrian use, in consultation with local stakeholders;

g) plow Overpass and interchanges without throwing snow onto underlying Highways or railways; and

h) keep free of snow, ice and slush, Rest Areas, pull-outs, parking areas, Weigh Scale Areas, and other areas designated by the Province with the same priority as a Highway of the next lower class from the adjacent Highway (e.g.; adjacent highway is class "B" then maintenance of the Rest Area is Class "C") and designated chain-up areas with the same priority as the adjacent Highway.

3.1.1 Performance Time Frames

a) **Maximum Allowable Accumulations**

i) The Contractor must start removing snow on the full width of the Travelled Lanes, ensuring that accumulations remain below the Maximum Allowable Accumulations shown in the table below:

Winter Highway Classification	**Maximum Allowable Accumulation**		
	One Lane Each Direction	**Second Lanes**	**All Other Lanes**
A	4.0 cm	8.0 cm	12.0 cm
B	6.0 cm	10.0 cm	16.0 cm
C	10.0 cm	n/a	20.0 cm
D	15.0 cm	n/a	n/a
E	25.0 cm	n/a	n/a

ii) Notwithstanding the foregoing Maximum Allowable Accumulation, plowing of slush and removal of broken compact snow from the Travelled Lanes that is unsafe must be completed within the following timeframes:

Winter Highway Classification			
A	B	C	D
90 min	2 hours	6 hours	n/a

Legend
min – minutes
h - hours

b) Completion of Snow Removal

The Contractor must complete removal of loose snow and slush from Highway surfaces on all Travelled Lanes on Winter Class A, B, and C Highways within 2 days of the end of the last measurable snowfall. Class D Highways shall be plowed within 2 days once the accumulation exceeds 5 cm. In allocating resources, appropriate attention must be given to areas known to be impacted first by snowfall and slush weather events (e.g.: mountain passes, higher elevation, known frequent snowfall and blowing snow areas).

c) The following table establishes the time from end of the last measurable snowfall and snow removal operations on the Travelled Lanes have been completed, within which the Contractor must remove compacted snow or ice from all Travelled Lanes with paved Highway surfaces:

Winter Highway Classification			
A	**B**	**C**	**D**
2 d	3 d	7 d	21 d

Legend
d – days

d) If extended periods of extreme cold make it impossible for the Contractor to comply with 3.1.1 c), the Contractor must remedy unsafe conditions including but not limited to, roughness and slippery surfaces.

e) The following table establishes the time from the end of the last measurable snowfall within which the Contractor must push snow and ice beyond the Shoulder edge:

Winter Highway Classification			
A	**B**	**C**	**D**
4 d	6 d	10 d	24 d

Legend
d – days

f) Notwithstanding the above, on Class A and B Highways, at all Superelevated curves and other locations where the Shoulder edge is higher than the Travelled Lanes, the Contractor must push snow and ice beyond the Shoulder edge within two days of the end of the last measurable snowfall to prevent snowmelt drainage onto the Travelled lanes.

3.2 Quantified Maintenance Services

Not applicable to this Maintenance Specification.

3.2.1 Performance Time Frames

Not applicable to this Maintenance Specification.

3.3 Materials

Not applicable to this Maintenance Specification.

4. WARRANTY

Not applicable to this Maintenance Specification.

BC MINISTRY OF TRANSPORTATION

Maintenance Specification 3-310

WINTER ABRASIVE AND CHEMICAL SNOW AND ICE CONTROL

1. OBJECTIVE

To facilitate the safe and efficient movement of traffic on Highways in winter conditions through the use of Winter Abrasives and chemical snow and ice control applications, and to ensure that the Contractor utilizes and deploys, those resources that are required to comply with this Specification, in a manner which anticipates and responds in advance of a Weather Event as defined in the Maintenance Specification.

2. GENERAL PERFORMANCE SPECIFICATIONS

2.1. Routine Maintenance Services

All services for this Maintenance Specification are Routine.

2.2. Quantified Maintenance Services

Not applicable to this Maintenance Specification.

3. DETAILED PERFORMANCE SPECIFICATIONS

3.1. Routine Maintenance Services

The Contractor must:

a) provide proactive winter maintenance services, in advance of and during a forecasted weather event, by:

i) applying Winter Abrasives and/or chemicals to minimize the development of Slippery surface conditions on Highways and to facilitate the removal of snow, compact snow and ice, as appropriate for the location. For the purposes of this Specification, a Weather Event includes any meteorological condition that permits the development of hazardous Slippery surface conditions which requires the application of Winter Abrasives, anti-icing or De-icing Chemicals and/or snow removal procedures to maintain or re-establish safe winter driving conditions;

ii) increasing monitoring of road temperatures and condition forecasts through Road Weather Information Systems (RWIS), other available forecast and information systems and patrols as necessary, to support the appropriate pre-Weather Event deployment of resources;

iii) notifying and deploying resources in advance of a Weather Event as required. Resources should be deployed and located to key geographic areas (e.g.: mountain passes, higher elevation, known frequent snowfall and/or blowing snow, Black Ice areas) prior to the occurrence of the forecasted Weather Event in order that Winter Abrasives and chemical snow and ice control can commence prior to, and during the anticipated weather and surface conditions;

b) when a non-forecast event occurs and when hazardous Slippery conditions are detected by or reported to the Contractor, immediately deploy resources;

c) immediately, restore surface traction by applying Winter Abrasive and/or chemicals when hazardous Slippery conditions are detected by or reported to the Contractor;

d) acquire and utilize Road Temperature and Condition (RTC) forecasts to determine if a Weather Event could develop that would reduce surface traction on the Highway surface; and, in advance of a forecasted event, respond by pre-treating the Highway surface with Winter Abrasives or anti-icing chemicals, as appropriate for the location;

e) utilize RWIS data to monitor existing and developing conditions in order to better time the application of Winter Abrasives or chemicals, as appropriate for the location, in advance of a Weather Event;

f) utilize RWIS data, if available, to determine if previous chemical application residuals are sufficient to maintain pre-weather event surface traction when a Weather Event is forecast, and to determine if applications of additional anti-icing or De-icing Chemicals are required to maintain surface traction; and

g) utilize other methodologies that may be available, such as thermal mapping, in conjunction with RTC forecasts and other road and weather forecast services, to better identify the locations and areas that may develop hazardous surface conditions as a result of a Weather Event.

3.1.1. Performance Time Frames

The Contractor must:

a) deploy resources to appropriate key locations (e.g.: mountain passes, higher elevation, known frequent snowfall and/or blowing snow, Black Ice areas) and at locations indicated by the road and weather condition forecast, at least 60 minutes in advance of a forecasted Weather Event or forecasted hazardous road conditions such as snowfall, Black Ice and freezing rain;

b) restore traction within the response times, from the time the deficiency was detected by or reported to the Contractor, as specified in the following table:

	Condition	Location	Winter Highway Classification			
			A	B	C	D
(i)	from beginning and or during snowfall event	hills over 5% gradient (one lane each direction)	60 min	90 min	2 h	4 h
		curves under 60 kilometres per hour	60 min	90 min	2 h	4 h
		school zones & intersections	90 min	2 h	3 h	6 h
		other locations	2 h	3 h	4 h	8 h
(ii)	Freezing rain	all locations	2 h	3 h	5 h	6 h
(iii)	Black Ice	all locations	2 h	3 h	5 h	6 h
(iv)	after snowfall	all hills (all lanes)	5 h	8 h	24 h	48 h
		all curves	5 h	8 h	24 h	48 h
		all other locations	24 h	36 h	3 d	as required
(v)	when Slippery surfaces are encountered during patrol	all locations	immediate application	immediate application	immediate application	immediate application

Legend
min - minutes
h – hours
d – days

c) prioritize locations within the Highway Classifications, such as mountain passes, higher elevation areas, areas known for the formation of Black Ice, accident sites, Bridge Decks and locations known to be unsafe;

d) remove compact snow or ice remaining on paved Highway surfaces, after snowfalls have ended, and snow removal operations on the Travelled Lanes have been completed, within the times specified in the table below:

Winter Highway Classification			
A	**B**	**C**	**D**
2 d	3 d	7 d	21 d

Legend
d – days

e) in extended periods of extreme cold, remedy unsafe conditions immediately.

3.2. Quantified Maintenance Services

Not applicable to this Maintenance Specification.

3.2.1. Performance Time Frames

Not applicable to this Maintenance Specification.

3.3 Materials

The Contractor must:

a) use materials and chemicals used in snow and ice control from the Recognized Products Lists or as accepted in writing by the Province for use on Highways;

b) use materials in accordance with the maximum allowable particle size for Winter Abrasives and the mean Gradation limits when tested according to ASTM Designations C136 and C117, and as shown on the following table:

		Winter Highway Classification		
		Class A & B	**all Class C and Class D paved only**	**all Class D gravel Highways**
(i)	maximum particle size	12.5 mm	16 mm	19 mm
(ii)	metric screen size			
	19 mm	N/A	N/A	100
	16 mm	N/A	100	N/A
	12.5 mm	100	N/A	N/A
	9.5 mm	N/A	80-100	80-100
	4.75 mm	50-95	50-95	50-95
	2.36 mm	30-80	30-80	30-80
	0-0.600 mm	10-50	10-50	10-50
	0-0.300 mm	0-25	0-25	0-25
	0-0.075 mm	0-6	0-6	0-6

Note: The figures shown in the above table represent the percent of material which passes through that particular screen size.

4. WARRANTY

Not applicable to this Maintenance Specification.

RE: winter standards JB

From: Buckle, Jon TRAN:EX s.15
To: Newhouse, John TRAN:EX <John.Newhouse@gems1.gov.bc.ca>
Cc: Keiser, Wayne TRAN:EX <Wayne.Keiser@gems9.gov.bc.ca>, Freer, Geoff TRAN:EX <Geoff.Freer@gems3.gov.bc.ca>, Fredrickson, Reg TRAN:EX <Reg.Fredrickson@gems7.gov.bc.ca>, Cooper, Tracy TRAN:EX <Tracy.Cooper@gems3.gov.bc.ca>
Sent: March 14, 2003 12:15:51 PM PST

John:
Thanks. I like the approach. I realize we are quite boxed in with what we can change in the winter standards, but anything we can do to make the words less "compelling" at this point would be good for the industry (and us) as it relates to liability and insurance, though I sense we are too late to make this further shift.
Jon

-----Original Message-----
From: Newhouse, John TRAN:EX
Sent: Wednesday, March 12, 2003 4:05 PM
To: Freer, Geoff TRAN:EX; Buckle, Jon TRAN:EX; Keiser, Wayne TRAN:EX; Cooper, Tracy TRAN:EX
Cc: Mackay, Bruce TRAN:EX; Fredrickson, Reg TRAN:EX; Pharand-Fraser, Nicole TRAN:EX
Subject: winter standards

attached are revised winter standards. We have taken out the Kevin Higgins clause but inserted another clause with different words. We did this because we realised after the fact that clause was in R4 standards and we can't reduce standards.

We also changed the notwithstanding clause with slush, changing ... removing slush...to plowing slush. removing was too definite whereas plowing recognises that some slush may remain after the plow has passed. We also changed class c from 4 hrs to 6 hrs.

We are planning to send out an amendment tomorrow Thursday with these attached. Any comments
<< File: 3300 Snow Removal Clean March 10, 2003.doc >> << File: 3310 Winter Abrasive Chemical - Clean March 10-2003.doc >>

Nicole is correcting minor references.

John Newhouse
Director of 2003 - 2004 Maintenance Contracts
British Columbia Ministry of Transportation
Phone (250) 356-6737 Fax (250) 356-7276
E mail John.Newhouse@gems1.gov.bc.ca

Maintenance Section annually and perform random District audits to ensure they are enforcing these requirements.

- Have the Maintenance Programs Section issue a contract for the development of a computer-based budgeting tool that can be used throughout the life of the contract to adjust and forecast maintenance costs, and also to establish the "macro" cost of maintenance in future rounds. This tool should also be able to forecast the cost of contracted maintenance during the tender process.
- Thoroughly document the costing rationale and approach used to develop the upset prices in the 03/04MCRP.
- Identify the insurance and bonding agency as a key stakeholder to the Maintenance Section and engage this industry in dialogue well in advance of the next round of tendering to ensure the Ministry has a keen understanding of the state of the industry and that the industry has a keen understanding of the needs of the Ministry. This would likely be enhanced by retaining an insurance and bonding expert that can verify the state of the industry.

12.2 Specification Development Phase

Background

During previous rounds of contracted maintenance service, contractors were operating under very prescriptive "standards" based on the standard operating procedures that existed prior to privatization in 1988. This approach required contractors to conduct activities as outlined within the standard, and then required MoT personnel to inspect a number of these activities to ensure they were conducted according to the standard. This approach and these standards had long been a source of debate.

Although the standards ensured a "quality" product was received from the contractors, the MoT inspection and testing regime was too resource intensive and needed to be changed.[51] With the reduction in staffing levels, the MoT recognized it could no longer utilize this inspection approach and needed to find an approach that would allow the MoT to remain confident in the services being purchased without the current level of resource dedication. This required more than a review and modification of the existing standards and administration program. It required an entirely new contract administration model based on outcome, not process.

The contractors had long felt that the standards were a barrier to implementing new techniques and approaches that would allow efficiencies to be gained without sacrificing quality. This had been presented in the findings of the 1995 Tripartite Committee and repeatedly at industry / MoT meetings over the years. The standards were now sixteen years old, and technology had changed dramatically over that time.

In mid-2001, the BoD began exploring existing management approaches that would ***allow greater flexibility for contractors while ensuring a quality service for the Ministry***. The goal was to establish the desired end result and a mechanism for ensuring that result was achieved, but to leave approach / methodology out of the document. It had also been decided that the ***service "on the road" had to remain at the same level as previous rounds*** – a change in the contract administration approach could not result in less service – and would include relatively equal amounts of routine and quantified work activities. Lastly, the level of service had to be consistent throughout the province and local area specifications could be used to address weather anomalies in isolated areas, but could not be used to broadly modify the level of service from one area to another.

[51] MoT, *Maintenance Service Manual: Standards for Road and Bridge Maintenance Services – Round IV* (MoT; Nov 22, 1996)

Research Findings

A team within the BoD was assigned the task of rewriting the standard into an end-product specification. Two standards were tackled first. They were:

- Gravel Surface Grading and Re-shaping
- Winter Abrasive and Chemical Snow and Ice Control

The team presented the BoD with a number of versions of the rewritten specification from April through September 2002. Each time the BoD debated the approach, intent, application and management of the specification, and sent the team back to rewrite. Agreement could not be reached among Board members on whether activities should be quantified or routine. It was obvious from the discussions that opinions varied depending on which part of the province was being represented. As a result, months went by without a decision made on the form and approach of the specifications; leaving little time for consultation with industry.[52]

In the summer of 2002, the Project Office hired a consulting firm to assist with the writing of the new specifications and broadened the core team to include representatives such as road and bridge area managers for specialty subject areas. The intent of this outsourcing was to augment the limited internal resources and ensure a consistent writing style in the final product. However, consulting personnel were disconnected with the intent of the specifications and kept changing over the life of the project. This was complicated by the differing level of buy-in and understanding within the internal writing team. Field staff were still struggling to come to terms with the workforce adjustment and new approach to managing maintenance. As a result, the consultants never obtained a clear understanding of the MoT's needs, writing ended up being both inconsistent and poor in quality, and specification form and content varied across specifications.[53]

By October 2002, the Project Office recognized they needed to change their approach to developing the specifications and formed a very small team consisting of Shawn McKinley,

[52] Ibid
[53] Ibid

Nicole Pharand-Fraser and Andrew Stewart. These people successfully rewrote a total of fifty-four specifications over a two-week period.[54] The on-line survey tool indicates that a success in this phase in that most people involved in this phase felt they had a good understanding of their role and contributed. An opportunity for improvement relates to the time allotted to this phase – although opinions did vary. This variation of opinion is likely a result of the larger team feeling positive about their involvement while in actuality the smaller team had to perform major last-minute rewrites without the larger team's involvement.

The Specification Development phase ties directly into at the RFP / Contract Development phase. Specifications were not completed and provided to the legal team until December 2002. Resulting impacts on the RFP / Contract Development phase will be explored in the following section of this report. Another task being tackled during this time was the development of the Contractor Assessment Program (CAP) Manual.[55] This was the Ministry's quality plan describing how it was going to administer the contract over the upcoming ten years. All of these activities were being administered by the same group of people within the Project Office, and with the specification development taking the lion's share of the resources, little time was left to focus on the development of CAP.

Interviews with Project Team members indicate that application and enforcement of the specification is presenting some challenges during the first year of the 2003/04 contract round. In some cases, this is due to unclear intent within the specification. In other cases, this is due to the omission of language or inclusion of language that changes the work requirements from the MoT's intent. Throughout the renewal process, ambiguities within the specification have been amended. However, this presents a challenge to the MoT after contract award, as it opens up the opportunity for contractors to renegotiate costs. At this point, most of the amendments have been determined to have insignificant cost impacts. However, as the contractors and Ministry become

[54] MoT, *2003 – 2004 Highway Maintenance Contracts Maintenance Specifications* (MoT; February 2003), <www.th.gov.bc.ca/BCHighways/contracts/maintenance/Sched_21_Maint_Specs_Oct30.pdf>, accessed January 22, 2005

[55] MoT, *2003 – 2004 Highway Maintenance Contracts Quality Plan and Contractor Assessment Programs* (MoT; September 2004), <www.th.gov.bc.ca/BCHighways/contracts/maintenance/CAP_Manual.pdf>, accessed January 22, 2005

more intimate with the administration of these specifications, it is anticipated that more substantive changes may be required.

Recommendations

- Begin specification development at least eighteen months in advance of the first tender and engage an external firm to provide all writing. Ensure the terms and conditions of this consulting service are clear and establish a regular monitoring system with milestones linked to performance payments.
- Bring the consulting firm into early discussion with the BoD to ensure they have a clear understanding of the Ministry's direction and intent.
- Allow more time for the legal review of the specifications. Although legal reviews tend to take as long as the time permitted, therefore requiring the establishment of clear and tight deadlines, more time is warranted for this activity. Balance must be struck between ensuring "paralysis by analysis" does not occur and allowing enough time for a thorough review and discussion.
- Outsource as much of the "doing" as possible.
- Establish a Ministry / industry working group early in the process to participate in a review of the specifications.
- Assign responsibility for leading the specification development to one individual within the Project Office.

12.3 Request For Proposal / Contract Development Phase

Background

The Request for Proposal / Contract Development phase was intertwined with the Specification Development phase and hinged on the determination of the contract administration methodology – the submission requirements depended on the expectations over the next ten

years. One could not make progress in this phase without first resolving questions in the other phases.

Based on the decisions of the BoD – to ensure the same level of maintenance services, establish end-product specifications and administer the contracts using less staff to verify "quality" – the Project Office was quickly drawn to the International Organization for Standardization (ISO) approach to quality management. In this approach, contractors are responsible for proving quality to the owner through an audit system. Initially, there was internal resistance to this as an approach. Some MoT personnel thought putting the contractors in charge of their own quality verification was like "putting the fox in charge of the henhouse". The Project Office researched the pros and cons of the ISO approach and how it would work within a highway maintenance service industry, and determined it to be a workable approach to ensuring quality highway maintenance services within BC. ***The RFP and Contract Development would be based on the ISO approach.*** Copies of the generic RFP and Contract are included on the compact disc accompanying this report. Due to their volume, they were not included in the Appendices of this report.

At that time, no other jurisdiction within North America was using an ISO approach to deliver outsourced highway maintenance.[56] Therefore, there were no "lessons learned" to draw from and a substantial amount of work had to be done by the Project Office to conceptualize how this would work within the industry. This concept was presented on a number of occasions to the BoD and by April 2002, the BoD had agreed in principle to implement an ISO approach.

The MoT wanted to require contractors to become ISO certified. One contractor was already in the process of receiving certification, and this requirement would allow the MoT to greatly reduce the proposal requirements of the upcoming 03/04MCRP. Certification would confirm that all contractors had a quality management system acceptable to ISO. It could then be assumed that certified contractors met the minimum requirements necessary to produce a quality maintenance product. Submission could essentially be limited to third party documents, local area knowledge and price submissions.

[56] Mason, Shanna, *Lump Sum vs. Unit Price* (MoT; September 2002)

BRITISH COLUMBIA

File Number: 57500-40/TRI

Date: November 29, 1999

Tripartite Standards Review Committee

RE: Revised Draft – Round 5 Maintenance Standards

I have attached the second draft of the Round 5 Maintenance Standards, as a result of our Standards Review Committee meeting in early November, in Victoria.

I would like to schedule a meeting in Vancouver, Richmond Inn, 1 day, for either the week of December 7-9th; or Decmeber 13-17, 1999. Please call, fax or email me with your preference.

Yours truly,

Grant Lachmuth, C. Tech.,
District Highways Manager

GL/np

cc: Ric Meidinger, Regional Mgr. Rehab. & Maintenance Services
John Newhouse, Mgr. Maintenance Programs

Ministry of Transportation and Highways

North Cariboo District

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TRIPARTITE STANDARDS REVIEW

COMMITTEE

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ROUND 5 CHANGE REQUEST

PROVINCIAL SUMMARY

MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
Highway Pavement Patching 1-100					
	South Okanagan	District has negotiated a Price for Spray Patching to be included in the Preventative Plan	Ammend Highway Pavement Patching Standard to include Spray Patching as an acceptable method for Preventative Maintenance Services. Also create a Preventative Activity Code (IE. 100S Spray Patching)	COST DECREASE as Spray Patching is less expensive. A portion of the Preventative Patching can now be performed with this less expensive method.	Agreed
	South Okanagan	Contractor is carrying out fairly large patches by hand (Preventative & Annual). Large hand patches do not provide the quality as other methods.	Limit the size of Patches performed by Hand (IE. 50m2 to 100 m2). Committee to determine size limitation.	? / COST IMPACT NONE	Agreed limit in size to 50 M2 for hand patch.
	Okanagan - Shuswap	Inline Blending Method (ROSCO) require Standards.	Application rates & procedures required to include - sweeping excess material from lanes - allow curing 24 hours - sign area "Loose Gravel" - final sweeping of site within 48 hours	No impact to formalize existing field procedures.	Agreed - Standards to be developed to cover this type of work.
	Cariboo	9 principles has made it difficult defining the difference between routine and preventative patches.	Incorporate the 9 principles into the standard also there should be no preventative patches allowed when temperatures are below +10 or in the spring months.		Temperature requirement already in the standard - Clarify.
	Lower Mainland	hard to keep track of quantities	To be routine work		Disagree Leave as is.
	Fraser Valley	Highway Pavement Patching	Take all Annual plan Paving out of the contract and return funds to the district.	Quality control will be better & funds better utilized.	Disagree.Leave as is.Ministry funding not secure.
	East Kootenay	Credit for spray patching is negotiated case by case. This is cumbersome and can discourage the use of this cost effective pavement rehabilitation method	Establish a separate price and quantity under Preventative Maintenance.Add spray patching as a quantifyed preventative activity.Products to be supplied to include but not limited to HF 150 emulsified asphalt, sand spray patch, and Rosco spray patch.	Easier administration, more widespread use of a cost effective method. Cost decrease, better roads.	Agree
	North Cariboo	Initial Response to Routine Pothole Patching has been interpreted to be "putting up a red marker only."	Ensure that the Standard reflects that Pothole should be Temporarily Patched: not just a marker.	No impact to cost. Only meeting the contractual obligation.	Requirement already in the standard.
	Fort George	Clause I & J. Interchangeable in Fort George so unnecessary.		Impact would be to streamline the reporting process.	Type of patch to be defined in the field.Agree to reword to better clarify annual and preventative patches (defer to standards rewrite group)
	Robson	Currently is split into Routine, Preventative, Annual, Replacement, Overlay, Temporary and Permanent. Could be simplified. MC is not differentiating between Preventative and Annual.	Possibly look at redefining Routine as all temporary patches and those under a certain size (m2?). All other patches would be Credited Units.	No impact, only redefines the units.	Reword to clarify.Include language to indicate that patch material will be of the same or better quality as existing.(Review application of coldmix.)
	North West	unit of measurement	annual patching shoud be measured by the tonne not the square metre	less grief when measuring	Disagree
	South Island	Type of Asphalt mix for various roadway classifications not specified.	Suggest Class 2 medium mix, unless otherwise approved by the Province.	None, ensures proper mix design	Include language to indicate that patch material will be of the same or better quality as existing.
	Howe Sound	New asphalt curb	Add preventative activity for installation of new asphalt curb.	Nil - clarifies existing work practices	Agree to add this item but for machine curb only.Standards to be developed.
	Tripartite	**Routine patching is not normally planned,nor is it warranted.It is intended to deal with those deficiencies that are concidered unsafe and are in need of urgent response.**	**Note only**		
	Tripartite	**(Not limited to in-line blending method.)**	**Take some preventative Maintenance quantaties in patching and create quantatles of Spray patch recognize these quantatles as Preventative maintenance.**		

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MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
Highway Surface Treatment 1-110					
	East Kootenay	Work is required to prepare the existing surface (patching, grading, road base) for sealcoating. There is confusion whether this work is routine or preventative. Roads may not be adequately prepared, decreasing the lifespan of the surface treatment.	State that preparatory work will be credited as preventative.	Minimizes risk to contractor. Surface treatment is laid on a well prepared base, longer lifespan. Easier administration and cost decrease.	Clarify in the standards under what conditions prepatory works will be credited.(ie if grade reshape is required it will be credited separately.)
	Fort George	Annual Plan should have a single seal and a double seal value . Should also have a value for a spray patch as well as a standard for this activity.		Impact would be to remove the spray patch from routine.	Agreed.
	Robson	Need to have two units: single seal and double seal. Some roads need portions of either. Price for double seal is not twice the single.	Add a unit for double seal Surface Treatment.	May lower cost of contract as some districts give credits for double seal areas at two credits of single.	Agreed.
Pavement Crack Sealing 1-120					
	Okanagan-Shuswap	Inline Blending (ROSCO) to be accepted for arge crack maintenance Provisions for (ROSCO) quantity	Same as 1-100	No impact - to formalize existing field procedures.	Agreed.
	Cariboo	Cracksealing work is being done when cracks are together	Additional wording added so work is done when cracks are wide		Leave as is.T-Circular being developed to clarify issue.Will become an enforcement item.
	East Kootenay	Crack Sealing can be effective without routering	A separate standard should be included for non-routering and a separate cost associated with it.	More accurate costing if routering and non-routering are separate.	Leave as is negotiate locally.
	North West	missing material from Gen Specs or Maintenance Contract	Add H150P to either the contract or the general specs	eliminates unnecessary discussion over negotiating costs	Refer to Geotec for guidance/advice.
	Tripatrite	**Cracksealing**	**Include in-line blending method for cracksealing,as a quantified Preventative Maintenance service.Quantatles to be taken from other crackseal quantaties.**		
Gravel Surface Grading 1-130					
	Okanagan-Shuswap	Routine grading vs. Preventative grade.	As per tripartite recommendations.	Should be very little impact as grading moved from routine cost to a measurable preventative cost.	Agree
	Cariboo	Many side roads are not built to a standard that will allow a proper reshape however credit is being issued for preventative proper reshape however credit is being issued for preventative work. Virtuallly all grading is being classed as preventative work.	Incorporate the 9 principles into the standard Change wording to state if the roads don't allow for a proper reshape it is routine work.		Agree to redefine routine and preventative grading.Require 3 levels of grading service:Touch-up,lightblade and full grade reshape for example.Standards rewrite to concider this.
	East Kootenay	Routine grading often involves the entire road, tying up contractor's equipment for long periods at unforeseen times. This makes routine grading contentious and often slow to start.	Establish a limit on what is routine, say, 25% of total road length. If a greater proportion of a given road requires work, consider work preventative.B) Establish a clearer defination between routine and preventative grading.	Better maintenance of gravel roads. Reduce risk to contractor. Cost neutral or some decrease.	As above
	Kootenay Boundary	Contralor reluctant to do routine grading. Feels almost all grading to be Preventative	All Grading will be Preventative--No Routine Grading This would be a quantifiable item.	We are paying for this work twice as contractor being paid for routine work but reluctant to do as routine, want preventative.	As above

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	North Cariboo	Constant disputes with MC about what is Routine and what is Preventative Grading.	Eliminate Routine Grading and move that value of work into Preventative. Create four (4) levels of Preventative Grading. Level 4 (highest) is credited at 100% of bid price and levels 3, 2, and 1 at percentages thereof.This would cover grading from tight blading to full grade reshape.	May reduce overall costs as it would more appropriately compensate MC for actual level of service delivered.	As above
	North Cariboo	"Compaction in accordance with the Standard Specification for Highway Construction (Reference pg 3)	Remove this reference from the Standards	No cost impact, but removes unreasonable/unrealistic expectations from the Standards.	As above
	Robson	This is a difficult standard, due to varying degrees of enforcement, particularly in reshaping of the shoulders and compaction requirements. Also routine (washboard, etc) is usually addressed by whole road cyclic grading, not just the spot grading as intended by the standard.	For routine: have a cyclic light blade type grading of most side roads once a year. Under credited units, split to 'road surface grading (top only, no ditches, wobbly wheel compaction)' and 'reshaping - wobbly wheel' (top and ditches, wobbly wheel compaction) and" reshaping - wobbly wheel" (top and ditches,wobbly wheel compaction) and "reshaping - vibratory" (top and ditch steel drum compaction).	May lower costs as we are paying 'reshape' and getting less.	As above
	North West	lack of routine services	remove routine services and using the same language create a second "preventative activity" to cover what used to be routine	less risk to the contractor	As above
	North Island	- new activity for continuous grading other than reshaping	Create Preventative Maintenance activity		As above
	Central Island	Remove administrative difficulty between Routine and Reshape (Preventative)	Make reshape Routine. Rewrite standard to incorporate 9 Principals statement	None	As above
	Central Island	Compaction is not practically measurable.	Assign a Road Area Manager/Geotech subcommittee to produce a practical field test guide that requires no calibrated expensive equipment (deflection under loaded tandem axles, etc.)	None.	As above
	Tripartite	**There is a recognition by all parties that this standard does not adequately differentiate between safety related routine and cyclic preventative grading of a network of gravel/earth roads that takes into concideration usage,such as logging,weather,and va**	**Possible 2 types of Preventative Maintenance Grading: 1) Grade Re-shape 2) Cyclic Surface Regrading.NINE PRINCIPLE DEFINITIONDEFINITION OF PREVENTATIVE & ROUTINE GRADING - 1)PREVENTATIVE MAINTENANCE GRADING: Continuous in nature and typically 5 to 7 passes.**		
Dust Control 1-140					COMMITTEE RECOMMENDS THAT DUST CONTROL AND BASE STABILIZATION STANDARDS BE COMBINED.
	Okanagan-Shuswap	Response time, Routine Maintenance Service.	Change from 48 hours to 7 days	Impact - mainly inconvieneance and being realistic.	Disagree.Leave as is
		Response time, Preventative Maintenance Service.	Change from 5 days to 7 days	Impact - mainly inconvieneance and being realistic.	Disagree.Leave as is
	Robson	For cost savings, MOTH could administer this standard as it is primarily subcontracted out and we seldom use the warrantee. Only other issue is the requirement to perform grader shaping of road prior to the application. Is this shaping credited or routine in preparation for dust control.	Define the grading associated with dust control as either Credited or routine. Contractors should be coordinating grading, followed closely by the dust control, but this does not always happen.	May lower cost of contract by reducing one overhead.	Disagree.Leave as is
	North West	dust control on class 7 roads	remove the requirement for dust control on class 7 roads notwithstanding locations requiring dust control due to environmental issues	reduction in service	Agree.

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	North Island	- not wide enough, encourages driving down centerline, road protection complaints.	Widen application widths, or change units from km to m2.	Widening increases costs, but improves safety; changing the unit of measure allows various widths for different roads, without increasing costs if some sites are not done.	Leave as is.Negotiate locally.
Base Stabilization 1-145					COMMITTEE RECOMMENDS THAT DUST CONTROL AND BASE STABILIZATION STANDARDS BE COMBINED.
	Robson	Base stabilization is often just a heavy duty Dust Control, i.e., There is no pre-water, compaction, etc.	Include in standard that Base Stabilization will only be credited when done in conjunction with graveling or grader reshaping works where applicable.	May lower costs as we are paying 'stabilization' and getting less.	Disagree.
	Tripartite	**BASE STABILIZATION**	**No cost savings**		
Highway Surface Gravelling 1-150					
	Okanagan-Shuswap	Quantity gravel per site (Maximum)	Possible quantity 15 - 20 M per site with a maximum quantity per km.	Cost decrease - incorperated into preventible maintenance	Quantify maximum amount (ie 20 m2 will be routine.)
		Allow pit run	Omit 75mm, replace with pit run	Cost Savings - more realistic	Agree
		Allow 19mm specification	19mm or 25mm high fines	Reduce material segregation cost savings in grading.	Agree
	Cariboo	Changing pitrun to 75mm subbase in the last contract has raised the cost for graveling. Many areas have a local area standard saying they can use pitrun instead of 75mm subbase.	It would be beneficial to use either item therefore we suggest to ask for both prices, one for placing pitrun and another for 75mm subbase		Leave as local issue and negotiate price.
	North Cariboo	Districts are often quantifying gravel usage by truck count, however, MC's are being credited anywhere from 7 to 10 cubic meters on a tandem. Most tandems can legally haul 7 to 7.5 cubic meters. Inconsistent credits.	Recommend that Standards define tandems at 7.5 cubic meters and belly dumps at 15 cubic meters, unless otherwise verified by weigh-slip to a higher legal axle loading.	No cost impact. Will reduce disparities between service areas and how they credit the maintenance contractors.	Agree to icorporate other methods of payment for maintenance Contractors.(ie asper hired equipment/Construction contractors where practical)
	Robson	Credits are based on stockpile measurement, except where only a few loads are required. Cost of survey is more than the activity.	Allow for 'truck count' based on material loaded for smaller gravel repairs, e.g., Less than 100 m3.	May reduce cost of contract; less surveys.	Agree.
	North Peace	A.1.b) LACKS DIMENSIONS/PARAMETERS	MAKE PREVENTATIVE OR ANNUAL SERVICES	NO INCREASE OR DECREASE IN COST	Quantify maximum amount (ie 20 m2 will be routine.)
		A.1.c) LACKS DIMENSIONS/PARAMETERS	MAKE PREVENTATIVE OR ANNUAL SERVICES	NO INCREASE OR DECREASE IN COST	As above
		C.1.b) & C.1.c)	TRANSFER TO PREVENTATIVE OR ANNUAL SERVICES	NO INCREASE OR DECREASE IN COST	As above
		B.1.a)-USE OF NON STANDARD MTLS.	ENFORCE S.G.S.B. SPECIFICATIONS	COST INCREASE TO CONTRACTOR	As above
		B.2C)(ii)-USE OF NON STANDARD MTLS.	ADD " WITHIN A REASONABLE HAUL DISTANCE"		As above
			ADD "AS DIRECTED BY THE MINISTRY"	COST INCREASE TO CONTRACTOR	As above
		C.2.a)- NOT NECESSARY	REMOVE RESPONSE TIMES	NO INCREASE OR DECREASE IN COST	As above
	Central Island	Compaction is not practically measurable.	Assign a Road Area Manager/Geotech subcommittee to produce a practical field test guide that requires no calibrated expensive equipment (deflection under loaded tandem axles, etc.)	None.	Disagree.Leave as is.
	Tripartite	**NINE PRINCIPLE DEFINITION OF ROUTINE GRAVELLING**	**Esisting standard definition:soft/muddy - under routine,should be better defined.Typically short impassable sections requiring one or two truckloads.The term "Isolated areas" may have a place in a rewritten standard.The intant is not to re-gravel under Routine.**		

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PROVINCIAL SUMMARY

MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
Highway Shoulder Maintenance 1-160					
	Okanagan-Shuswap	All the growth of sod at specific location where approved as designated by the Ministry.	Allow sod growth at a) inside shoulders of sharp super-elevated curves b) steep grades c) narrow shoulders.	Cost savings - routine shoulder washout also preventative maintenance - gravel	Agree to modify to allow in certain situations.(ie where drainage is not impeded ect.)
	East Kootenay	Weed Control not being handled by this activity.B) May help to decrease routine from 100m. To 30m.	Look into the possibility of an environmentally friendly Herbicide ie: Sahare DG used in the states. With weed control a lot of our shoulder problems would be elevated.	Less ponding due to sod. Neater appearance. Decrease time spent on mowing as shoulders are now being mowed due to vegetation.	Agreed
	North Cariboo	Mowing costs are excessive due to vegetation on surface of shoulder. Shoulder maintenance - virtually impossible to remove sod from shoulders. Not economical to pick it up and not advisable to grade or incorporate into granular shoulder.Impedes lateral drainage through road structure.	Recommend reinstalling Shoulder Sterilization Program, or review merits of steam injection vegetation control.	May reduce overall maintenance costs. Will definitely improve conditions of shoulders. Reduce mowing requirements and shoulder maintenance. Will be environmental concerns with proposed use of sterilants.	Agreed.
	Robson	In practice the 'less than 100 meters' seems too large. Only thing that should be fixed under routine is a 'spot washout' (possibly look at 10 m or less?). All other work should be a Credited Unit. Often a series of washouts are fixed by Preventative type work under credit.	Redefine routine as spot washouts (possibly less than 10 meters in length). Preventative should be all shoulder grading where no material is added. Annual should be shoulder grading where material is required and 'extra' credit should only include the additional materials.	Will reduce the number of routine instances and the size of routine repairs.	Disagree.Leave as is.
	Central Island	As shoulder sod can be beneficial, pay for removal only where MoTH desires.	Create Preventative removal unit for grader only removal, and Annual Plan unit for grader removal plus pickup and haul away.	None	Disagree.Leave as is.
	Tripartite		**Annual Plan should be done by volume in cubic meters as opposed to the existing lineal meters.Make sure not to address major washouts in this standard,linkage wording with the Emergency Washout Standard.HERBICIDES:Cost savings if this is allowed.Activities related to this are mowing,sod removal,landscaping and island maintenance.Contractors to supply list of activities.**		
Road Base Maintenance 1-170					
	Okanagan-Shuswap	25mm surfacing segregates on gravel road.	Allow 19mm crush surfacing on gravel roads which are not proposed for paving	Cost savings - reduces material segregation, in turn reduces grading.	Agree.
	Fort George	The issue is that the work is done in square meters.	Resolution is to change the work being done to cubic meters.	There is no impact. It's easier to track and we're converting for cubic meters anyway.	Leave as is.
	Robson	Geotextiles are seldom used.	Add a unit for 'with geotextiles' or have the MOTH supply the material.	May reduce cost of contract as some contractors are probably guessing some use of geotextiles in bid price.	Disagree.leave as is.
	Tripartite	**ROAD BASE REPAIR**	**No cost savings**		
Pavement Surface Cleaning 1-180					
	Lower Mainland	Chapt. 1-180 P.3 refers to cleaning in accordance with "Ministry Policy and Practices for the maintenance of Bike & Ped. Paths"	This Policy needs to be written - it does not exist		Agree.HQ to develop this policy.(defer to John Newhouse)
	East Kootenay	Contractors are often slow to start and complete spring sweeping. It can also be difficult to arrange sweeping in a timely manner before Ministry work.	Move sweeping to preventative and establish a price and quantity. Spot sweeping in routine (e.g., at intersections) is included in Rock and Debris Removal.	More timely response from maintenance contractor. Sweeping would be scheduled, with less risk to the contractor. Cost neutral.	Disagree leave as is.

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MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
	Howe Sound	Pavement Surface cleaning - response time for specific locations where debris builds up quickly (eg - Hwy 1 - Main St to 1st Ave) should be increased.	Adjust response time/frequency to bi-weekly	increase	Agree to revisit response times in Urban areas.
	Howe Sound	Pavement Surface cleaning - response time for bike paths should be reviewed			Agree.HQ to develop this policy.(defer to John Newhouse)
	Tripartite	**PAVEMENT SURFACE CLEANING**	**No cost savings**		
Rock and Debris Removal 1-190					
	Cariboo	Response times are too high, it's a safety hazard it won't be a increase in contract price, it just reflects what is happening in the field	For dead animals on traveled lane response times should be changed to: Class 3 to 1hr, Class 4 to 3hr Class 5 to 3hr, Class 6&7 to 3hr Change response times for fallen trees on traveled lane for class 5 to 7 hr,class 6&7 to 6 hr.		Disagree.Leave as is.
	East Kootenay	Confusion whether loose gravel, especially at intersections, is covered by this standard.	Include wording that loose gravel, whether spilled or kicked up from gravel shoulders at intersections, is included in this standard. Under methods, handsweeping is appropriate for small areas.	Clarification only. Cost neutral.	Agree.Clarify as necessary.
	Selkirk	Ditches, R/W not referred to in standard I.e., Not able to get Contractor to remove large rocks in the ditch that are not a drainage problem.	Add Rock & Debris removal to A (a) add ditches and R/W to Notes:1-190	Not a cost issue.	Disagree.Leave as is.
	Tripartite	**ROAD AND DEBRIS REMOVAL**	**No cost savings**		
Highway Structures Maintenance 1-200					
	Cariboo	B.2.b)iii M.O.T.H. maintains lights in urban area, we suspect we also maintain lights in rural areas.	remove from standard		Agree.
	East Kootenay	Cattleguards that have become a safety hazard need to be replaced. Where no permit exist, the cattleguard should be replaced under the maintenance contract.	Add new cattleguard installation as a new item under annual maintenance.	Better ability to respond to hazardous situations. Cost to maintenance contract increased. Cost to Minor Betterment budget decreased. Cost neutral.	Disagree.Leave as is.
	North Peace	MINISTRY STRUCTURES- BRIDGE GATES & STAIRCASES ECT. NOT CLEARLY STATED.	A.1. REWRITE TO READ " THE CONTRACTOR WILL CLEAN AND MAINTAIN HIGHWAY STRUCTURES AND ASSOCIATED COMPONENTS THAT HAVE CONSTITUTES OR HAS THE POTENTIAL THE TRAVELLING PUBLIC AND/OR OTHER HIGHWAY USERS."	CLARIFICATION WITHOUT INCREASE IN COST- PREVENTATIVE CREDIT TO BE GIVEN FOR REPAIRS TO BRIDGE WALKWAYS AND STAIRCASES	Agree to clarify standard.
	Tripartite	**HIGHWAY STRUCTURE MAINTENANCE**	**No cost savings**		
Curb,Island and Barrier Maintenance 1-220					
	Howe Sound	Anti-glare screen not addressed in standards	Response time of 72 hours	increase	Agree.
	Okanagan-Shuswap	There are situations where guardrail and extended curb are required (New or Replacement)	Allow Annual plan cost per lineal metre of concrete barrier on extended asphalt curb.	Will allow minor safety issues to be addressed. Also curb to reduce shoulder erosion.	Agree (See Highway Pavement Patching recommendations)
	East kootenay	There is a need for new as well as repair worn curbing(asphalt).To do this we are negotiating in the field This activity should be added to reflect unit prices. Currently there are no preventitave or annual quantities in the standard.	Add Routine= replace any broken or missing curb, Preventative = repair any existing worn curb that has lose its ability to properly function as intended.Work shall be according to standard specs. Annual = install new curb as required to improve and or control drainage	Allows maintenance to plan for curbing to improve drainage with flexibality to do machine or hand placed curb as long as it meets the standard. Should be a cost savings to the whole infastructure as long term uncontroled drainage causes the most damage.	Agree (See Highway Pavement Patching recommendations)
	Robson	Impact attenuators: this is problematic in that there are many different types, with varying costs, and are usually an expensive fix. Bid price may reflect overestimation of replacements, or ordering of individual components.	Possibly the Ministry should provide some of the materials required, especially where suppliers are limited and the cost of ordering one barrel is high. This is offset by the recoverable maintenance costs.		Disagree.Leave as is.

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MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
	Central Island	Lack of rolled asphalt curbing price is problematic for new installation.	Create an Annual Plan activity price for new locations only, leaving winter damage repair as routine.	None	Agree (See Highway Pavement Patching recommendations)
	Central Island	Curb, island and barrier maintenance	price per meter and quantity for new locations	None, shift from annual values to cover	
	Tripartite		**a) Allow properly permitted and used herbicides. B) Add unit price for additional barrier installation on side roads c) Additional unit price for supply and placing of asphalt curb (Annual Plan).For all of this the proviso that there will be no net increase in dollar value of the annual and preventative program.**		Agree with - A Disagree with - B Agree with - C
Railway Crossing Maintenance 1-230					
	Okanagan-Shuswap	Construction should not be responsible for this cost.	Invoices for this cost should be paid through Gordon Eisenhuth's office.	Cost savings. Construction risk.	Agree The process need to be audited for best practice.
	East Kootenay	To get prompt repairs to railway crossings ie: improve ridability/ grade it would be advantagious to include it in Preventitave Plan.	Add Preventitive to the standards so any problem crossings can be put into a plan and not left so long they become a safety concern.	May reduce risk to Contractor as they can now plan to repair rather than wait for the must repair.	Disagree.Leave as is
	Fort George	The issue is the high administrative cost (Lot of time spent dealing with this)	Proposed resolution is to remove this from the maintenance contract.	The impact is that it will reduce the cost of the contract.	Leave standard as is but Ministry pays costs.
	Robson	As the Rail Authority performs the work and send us the bill, we should pay directly and avoid the extra overhead charge placed on the payment by the Contractor	Remove the Rail Authority works portion from the Standard.	Reduces the overall Contract cost, but will have to be funded at the District Operations level.	Leave standard as is but Ministry pays costs.
	Tripartite	**The Contractor has no control over the work,timing,or costs of this activity.As agreed,The Association is obtaining costs from the Contractors for the next meeting.**	**The Ministry needs a secure place to fund the railway crossings.Perhaps,a provisional sum based on a 5 year average cost could be included in the Preventative Services Program.**		
Ditch and Watercourse Maintenance 2-250					
	Okanagan-Shuswap	Re-occuring slide areas can be planned.	Re-occurring slide and slough areas which do not impede water flow, the integrity of the road or safety of the travelling public to be covered under the preventative plan as ditching or slough removal (M3)	Cost savings to contractor.	Leave as is Requirement already in Standard.
	Okanagan-Shuswap	There are situations wherer a minimum ditch gradient of 1 meter fall in 100 meters cannot be achieved	Should read a sufficient gradient to allow the water to flow without ponding.	Being realistic.	Disagree.Leave as is.
	Fort George	The issue is the definition of routine and the 'site specific' wording which makes it Preventative Maintenance.	Proposed resolution is to take 'site specific' out of the routine definition.	No impact.	Disagree.Leave as is.
	Robson	Standard is working better now than previously, but there is still a problem with control of grades. With little or no survey control, ditches tend to get deeper, have ponding and undercut of existing culverts	Speak to the QUALITY of the work in the standard: set out control basics, either level run staking or laser level.	Impact is better long term drainage system. Higher quality is a bid more expensive at time, however is better in the long run.	Leave as is.Change is a cost driver.
	Robson	Brush around culvert inlets and outlets. Culverts not marked.	Maximum brush height shall not exceed 1 meter for a 5 meter radius around the inlet and outlets of all culverts and flumes.	Benefit in locating culverts and associated problems more easily by the MC and MOTH alike.	Agree.
	North West	waste material sites	Permits for any and all waste removal sites shall be the responsibility of the contractor. Any sites owned by the Ministry shall be leveled and cleaned to the satifaction of the Ministry	small increase	Agree.Clarify standard if required.
	North West	measurement of quantity for new ditches	change the measurement from lineal metres to cubic metres	eliminates some risk to the contractor	Disagree.Leave as is.

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	Tripartite		**Sloughing which reoccurs and is reasonably predictable will be Preventative except for the portion that sloughs onto the road or top of shoulder surface.These materials will be removed under Routine Maintenance.The portion in the ditch can be left for Preventative Maintenance Program,providing it is not blocking a watercourse.**		OK provided the slough is not blocking a watercoures or creating a hazard.
Drainage Appliance Maintenance 2-260					**Will require wording in standards to cover the new requirements of MOE as they pertain to work in wetlands.**
	Okanagan - Shuswap	C.3.a),b) and c)	A.P. culvert installations up to 600 mm,1200 mm and greater than 1200 mm.		Agree.
	Fraser Valley	Drainage Appliance M'tnce	Catch Basin installations - 2 types. Unit price for asphalt and for metal. Private access culverts must be maintained by contractor when infrastructure is endangered or directed by MoTH.	Separate price for Annual Plan is potential decrease.Maintain private culverts is increase.	Agree to define different types of Catch Basins Disagree with maintaining private accesses.
	East Kootenay	Very small diameter pipe, especially for flumes and perforated pipe, is charged at the same rate as culverts to 750 mm. As a result, minor culverts are not cost effective to install under maintenance contract.	Under C.3. add quantity for culverts up to 400 mm. Next class would be 401mm to 750 mm.	Culvert appropriate for situation will be used. Some savings to Ministry.	Agree.Add unit price for flumes.
	East Kootenay	Some culverts are known to have restricted capacity and need to be cleaned well before 50% is obstructed	Change Section C.1.b (Note) to "50% or more, or where culvert has known history of problems ..."	Clarification only. Reflects current practice in most areas. Cost neutral.	Agreed.
	East Kootenay	In many areas, culverts are not regularly inspected and minor cleaning performed. This leads to serious consequences resulting in flooding or washouts that may not have occurred if simple, scheduled maintenance had been performed.	Include provision in this standard, rather than just Highway Patrol, to require a schedule for culvert inspections. Also include wording that minor (hand) cleaning/brushing is to be done at time of inspection	Increase in day-to-day costs for maintenance contractor. Significant savings under emergency response costs both to contractor and Ministry.	Agreed.
	East Kootenay	Culverts often need to be replaced with the same size culvert. This is currently considered routine and is a contentious issue.	Include all culvert replacement (other than damaged ends or damage caused by maintenance) in preventative.	Easier administration, less conflict. Cost decrease to maintenance contractor, slight increase to Ministry.	Agree to replacing same size.Reword to give sredit under preventative.Include separate unit prices for open cut and for push.
	Fort George	At issue is the replacement of culverts.	Rather than approving sections of pipe replacement under AP, change the standard so that only complete replacement of culverts are compensated under AP.	We foresee no impact.	Disagree.Leave as is.
	Robson	Lack of inspection and identification of problems associated with culverts	The inlets and outlets of all road culverts, except multi-plates, shall be marked with material and method as specified by the province.	Benefit in locating culverts and associated problems more easily by the MC and MOTH alike.	Leave as is Change is a cost driver.
	Robson	There is a large difference between replacement of a culvert under a sideroad and one under the main highway, even though the Highway replacement will not reach the $35,000 cap. MC are very reluctant to do deep fill or highway replacements.	Reduce the risk associated with this activity by including credits for patching and for base repair in association with deep or highway culvert replacement: the culvert unit price should just be the culvert portion of the work.	Should lower the price as the MC will not build into his bid any large (just under $35,000) replacements.	Disagree.Leave as is.
	North Peace	A.1. -NON MTC,REPAIR,INSTALLATION OF CULVERT MARKERS	A.1.-ADD MAINTENANCE,REPAIR,INSTALLATION OF CULVERT MARKERS	MINIMAL COST INCREASE TO	Disagree.Leave as is.
		B.2.a) ii) - SEE ABOVE	B.2.a) ii)-ADD TO -ANY WORN ..DAMAGED	MINIMAL COST INCREASE TO	As above.
	North Island	- standard does not cover wall thickness, not in Standard Specifications, in Design Manual; Design Manual not referenced in Stds.	State thickness and specify different types (metal, plastic and concrete)	No	Review standard specs to clanfy/confirm thickness is specified.
	North Island	- cost for replacing the same with the same	Create Preventative Maintenance activity	None, transferred from Routine to Preventative.	Agree

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	Central Island	Routine culvert replacement can be difficult and opinion driven.	Make same size culvert replacement an Annual Plan item.	None, transferred from Routine to Annual.	Agree to include in Preventative.
	Central Island	Catch basins have significant cost difference between the various standard specification types.	Add Annual Plan prices for CBS as per each of the MoTH Standard Specification Drawings (1-SP226,7-SP219,8-SP-219)	None	Agree.(See related comments in this section)
	Central Island	Asphalt patching is an example within culvert installation activities, where completion of work described in a second activity, is required to complete the first (culvert) activity. Contractors often ask for for credit under both activities.	Add a statement in the introduction to the Standards indicating that the Annual/Preventative prices for a given standard include compensation for all activities related to the completion of the subject activity.	None.	Leave as is Already coverd in the standard.
	Howe Sound	Catch Basins:- metal, concrete w/w cleanouts manholes, double inlet	clarify within annual plan what type of catch basin will be installed with separate unit cost for each	Nil - better clarification of type of catch basin	Agree.
	Tripartite		**Quantify all culvert replacement,including same size replacements.Asphalt required for surface repair in this activity should be credited to Preventative Maintenance as is road Base Repair. (Chapter 1-170-3(h))**		
Streambed and Bank Maintenance 2-270					
	Okanagan-Shuswap	Unrealistic to have an open ended standard.	Have a maximum distance upstream and downstream that the contractor must maintain streambeds.	9 principles decrease for contractor.	Leave standard as is and resolve issues locally.Too difficult to limit distances upstream as every situation is different.
	Fraser Valley	Streambed and Bank Maintenance	Needs clearer definition of contractor responsibility - off of the right-of-way.		As above
	Robson	Bed loading, even though included in the standard, is hard to define. When does gradual bedloading become 'significant' and require removal?	In some instances, control measurements, or surveys may be required to establish a baseline capacity, and a local area standard to define when the removal is required.	Will clarify when the streambed needs to be cleaned out.	As above
	Tripartite		**Clarify,if possible,responsibility (distance) for upstream and downstream works.Intent now is there is no limit to the distance of responsibility.Because this is a local issue with many variables,clarification may not be entirely possible.**		
Highway Snow Removal 3-300					
	Okanagan-Shuswap	Island snow removal necessary for safety concerns.	Snow accummulations on islands to be removed before snow depth exceeds the height of the lowest part of any sign on the island and not to restrict sight distance or lane widths.	Safety issue.	Leave as is Enforcement issue.(Sign and delineators standard may give relief.)
	Canboo	Section B 2.H) allows for the sidewalks to have snow on them too long.	Change wording to read that the snow will be removed 24hrs after the snowfall ends.		Disagree.leave as is.
	Canboo	Accumulation of snow on the side of the Guard rail is a Safety Hazzard (changes the chareristic of guardrail)	Add wording so when there is snow piled to half of the guardrail height it must be removed within 72 hrs.		Leave as is.Change is a cost driver.
	Selkirk	Contractor not commencing to remove compact show or ice soon enough.	Add to note C)1.(b) notwithstanding the above on Class "A" and "B" Highways the Contractor will immediately begin grading rough compact snow (at the discretion of the Ministry)	Not a cost issue, but will direct the Contractor to begin sooner	Leave as is.Change is a cost driver.
	Fort George	The issue is the depth of compact on Class A & B roads.	The proposed resolution is to define the maximum allowable depth of compact allowed prior to de-icing, so that if the compact is thicker than allowed the contractor must ice blade until the compact is at the required thickness or less before they salt.This would get rid of a lot of slush build-up and just maybe a contractor somewhere might be proactive.	The impact would be a lower cost due to less salt being used.	Leave as is Enforcement issue.(Sign and delineators standard may give relief.)

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MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
	Robson	Although sometimes difficult to achieve and administer, this Standard is very clear. Only possible addition. a trigger for patrol or inspection between shifts during snow warnings.	Addition of wording under Scheduling, notes: the Contractor will have in place a method of patrol to ensure highway does not exceed the standard between shifts. This may also be applicable under the Highway Inspection Standard.		Disagree.Leave as is.
	North Peace	B 1.a)-PROMPT SNOW REMOVAL FROM WHEEL GUARDS ON BRIDGES	ADD "ADJACENT TO WHEEL GUARDS ON BRIDGES"	NO INCREASE OR DECREASE IN COST	Leave as is.These are concidered part of travelled lanes.(Clarify in standard if necessary.)
	Central Island	Winter road classification is the same for volumes from 5000 to 100000 plus. Higher levels of service may be appropriate for higher volumes.	Re-assess winter road classifications to provide differentiation in the levels of service provided.	None: If the shift up is counter balanced by a shift down in other classes.	Leave as is.Change is a cost driver.
Winter Abrasive and De-Icing Chemical Applications 3-310					
	Cariboo	C.1.a)(ii) Response time is too high, many accidents happen during this time. Many contractors already have a quicker response	Change initial application response for Class A to 5hrs,Class B to 8hrs, Class C to 12 hrs		Leave as is.Change is a cost driver.
	Selkirk	Contractor not commencing Chemical application soon enough.	Chance c.1.(ii) table for initial application on Class "A" & "B" Highway to 2 hours and on Class "C" 8 to 12 hours.	Not a cost issue, but will direct the Contractor to begin sooner.	Leave as is.Change is a cost driver.
	Robson	Need to emphasis the requirement to sand 'slippery sections' whether they are tangents or not. Problems this year with sanding only of hills and curves and not the tangents. Long-term buildup of compact then becomes difficult and expensive to deal with.	May be an enforcement issue, but some wording my assist in the enforcement. Ice balding is required where salt is not effective.		Leave as is.Enforcement issue.
	North West	Response times	Insert clause (if forecasts indicate appropriate temperatures chemical shall be applied within 2 hours of the temperatures coming into existance	clarifies response times	Leave as is.Enforcement issue.
	Howe Sound	Winter Abrasives - Class ABC paved roads	Spec for abrasives should include 5% sodium chloride.This material type tends to prevent icy compact surface from forming and generally allows the snow, sand mix to mulch thus providing improved traction, especially at intersections	Increase. but improved traction will probably reduce accidents	Leave as is.
	Howe Sound	Other De-icing Chemical	Include mixed loads of calcium chloride and sodium chloride in standard which will lower effective use temperatures to the -7 and -9 range. Especially important for the after snowfall application.	Increase, but will provide better road surface free of slippery conditions, resulting in fewer accidents.	Leave as is.
Compact Snow Road Maintenance 3-315					
		No Issues			
Roadside Snow and Ice Control 3-320					
	Thompson	Maintaining a School bus route standard when school is Out	Default To D standard on weekends, state holidays,Christmas,ect ..If it is "c" for commercial or Industrial then stays the same	More realistic to what is actually done. Would reduce moth payments but probably no savings to contractor	Leave as is.Review and adjust at local level.
	Robson	Need to include portals and cross bracing on arch span bridges to the list (not specifically stated). When Not done this presents a safety hazard for passing vehicles, especially in heavy snowfall areas.	For the portals and cross bracing, a maximum depth should be established at which time snow removal, in a safe manner, will occur	Clarifies an outstanding issue for both parties.	Agree

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	Howe Sound	Require better clarification of Ministry expectations and methods to be used for ice removal from rock faces.	Ministry Geotechnical section should inventory problem locations and provide input on removal or control methods. Standard re-written.	Unknown, although significant exposure to legal action unless standards and methods are clarified.	Disagree.Leave as is.
Small Airport Winter Maintence 3-325					
	North West	snow accumulations	set maximum and minimum depth at which the contractor has to start plowing	better service	Agree.North West Region to propose depths
Weather Monitoring Service 3-330					
	Robson	Possible include reading of Methylene Blue Frost Probes under the routine aspect of this standard.	Add wording to reflect this.		Agree.Specify frequency in standard (ie 1-2 times per week or as directed by the Province.)
Highway Condition Reporting 3-340					
		No Issues			
Roadside Mowing 4-350					
	Lower Mainland	reduce mowing width and/or allowable height of grass. L.A.S. in district results in 4 or 5 cuts per year, depending on growth rate of grass.	Urban standard >2 cuts per year, offset from shoulder > 4.0 metres on all roads.	Significant savings could be achieved.	Agreed.Incorporate as provincial standard.(Urban Freeway Standard.)
	North Peace	A.-REDUCTION IN MOWING NOT ACHIEVING OBJECTIVES	ALL MOWING SHOULD BE ROUTINE AND COVER ALL CLASSES.	NO INCREASE OR DECREASE IN COST	Disagree.Leave as is.
	Central Island	Lack of full width median mowing within the standard. Area mow price is 20 times roadside price, currently.	Add a Preventative price for full width median area mowing.	None.	Already in Standard.Clarify with District.
	North Island	- no mowing on Class 7 roads	- add Class 7 as directed by MOTH	Mowing less $ than brushing	Agree.
	Tripartite		**Ascetic mowing could be dropped or traded.**		
Roadside Brushing 4-360					
	Fraser Valley	Roadside Brushing	Remove "Danger Trees" from the contract. Take 20 cm from the contract. All trees to be removed by province.		Leave as is.Clarify definition of "Danger Tree" in definitions.
	Robson	Standard is fine, but needs a diagram!	Add a diagram for the various classes		Agree.
	North Peace	IS THERE A NEED FOR PREVENTATIVE AND ANNUAL SERVICES	COMBINE C.2. & C.3.	NO INCREASE OR DECREASE IN COST	Leave as is.There is a difference between machine and hand cut.
	North Island	- median mowing/brushing - current standard states 0 - 15 m	- should read 2 - 15 m brushing		Agree.Housekeeping issue.
	Central Island	Brushing width inadequate on 100 K plus routes, impairing sight distance.	Increase width to 2-10 meters on 100 K plus routes, in the Table in B2a)	None.	Leave as is.Sight distance mowing is routine.
	Howe Sound	Require better clarification of machine brushing (preventative)	Standard need strenghtening with regard to preventative machine brushing. Standard requirements overide the capabilities of m/c's own machine.	nil - better clarification of requirements and absolutly no side deals at the negotiation table.	Leave as is.
	Tripartite	**Danger Trees**	**No cost savings**		

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Roadside Litter Collection and Graffiti Removal 4-370					Ministry should look at "adopt a road "program.Could result in cost savings.
	Fraser Valley	Roadside Litter Collection graffiti removal	Pick up litter at Roadside barrels and clean and empty barrels by 1100 hrs.	Increase	Leave as is.Change is cost driver.Look at local area standard if required.
	Tripartite	**Roadside Litter and Graffiti Removal**	**No cost savings**		
Rest Area Maintenance 4-380					
	Fraser Valley	Rest Area Maintenance	Cleaning by 0930 hrs. Needs 24 hr. coverage in the summer - 7 days a week. Local Standard in place.		Leave as a Local Area Standard.
	Robson	Are the repair of roads, and snow removal at rest areas part of the Roads Standard or the Rest Area Standard? Pothole repair and grading etc are not mentioned, and roads internal to the rest area aren't individually identified in the RFI.	Need wording in either standard to reflect the maintenance.		Clarify in standards (Rest Areas and Pullouts response times)
	Central Island	Activity is stand alone. Maintenance Contractor administers with markup. MoTH could do it directly at reduced costs.	Remove rest area and landscape maintenance from the contract and contract it directly rather than through the maintenance contractor.	10% decrease in rest area/landscape costs.	Disagree.Leave as is.
	Tripartite	**Rest Area MAintenance**	**No cost savings**		
Roadside Landscaping Maintenance 4-390					
	Okanagan-Shuswap	Cost to maintain vegetation areas.	All new or reconstructed vegetation areas should be designed for low maintenance sites.	Decrease in cost (annual).	Include "as approved by the Province."
	Howe Sound	Landscaping - Cassiar Tunnel Area - South end of 2nd Narrows - designed to be left natural however numerous complaints from MLA & public re broom & blackberries.	Increase landscape site to include area mowing throughout or include activity for removal of broom & blackberries in sites designed to be left natural.	increase	Local area standard
	Fraser Valley	Roadside Landscaping Maintenance.	Relax/remove from contract. - especially bark mulch replacement, aeration etc. as it is not being done.	Decrease	Agree.
	Central Island	Roadside landscape maintenance	Review design manual to ensure it corelates to the maintenance standard (Bark Mulch, more?)	none	Agree.
	Howe Sound	Landscape sites	Program should be set up to convert plantations to grass thereby eliminating cost of bark mulch application, pruning and other routine activities associated with plantations.	decrease maintenance costs in long term.	Agree.
	Tripartite	**Landscape Maintenance**	**Level of service could be reduced.High cost landscape areas will be identified by the industry.**		
Roadside Fence Maintenance 4-400					**This standard must reflect latest Ministry Policy.**
	Okanagan-Shuswap	Fencing should be farmers responsibility.	Remove B.3.a) from standards.	Contractor does not do this fencing. Should be a reduction in risk costs.	Agree
	Thompson	B.2.Language should state "the adjacent Land owner" not rancher or farmer.	same as issue	defines area of responsibility clearer. Law suites pending.	Agree
	Cariboo	Without a ministry fence policy this standard should be removed	Remove all fence repairs except fence damages by vehicles		Policy issue.
	Howe Sound	Fencing - wood fences on Hwy 1 in West Vancouver are over 25 years old and require replacement from natural deterioration.	Create preventative Fencing replacement activity	increase or no impact	Agree in principal.Incorporate in standards (add unit price for Chain Link fence.)

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	Robson	The routine repair of sections 'less than 300 meters' is seldom used, and is difficult to determine if it is a 'farmer' or MC problem.	Make this a Credited Unit and we'll give credits per meter of fence replaced. Possibly a separate unit for reposting or rewiring. Or take it out of the standards and fund at the District Level.	Clarifies responsibility and reduces risk for MC.	Disagree.Leave as is.
	Tripartite	**Fencing**	**No cost savings**		
Signs and Delination Maintenance 5-440	South Okanagan	Contractor is disputing responsibility of electrical repairs on signs which are illuminated.	Better define responsibity of repairing electrical breakdowns on illuminated signs	? / COST IMPACT NONE	Clarify Ministry/maintenance contractors areas of responsibility.)
	Thompson	A.1.language too ambiguous	we don't maintain a damaged sign or deteriorated sign, we don't repair a deteriorated sign,we don't relocate a damaged or deteriorated sign.	should be status quo. NO standard change ,just more clearly defined.	Leave as is.Education issue.
		A.2. Language	"Additional post" post may require different spacing to match new sign face,may not require an additional post but perhaps longer or larger size posts.Create new activity for post conciderations or define existing better.	R&B Will be compensated for work done.Would probably be taken from our existing allocation of A&P plans.	Leave as is.
		3.f. "relocate signs not located as specified in the sign manuals"	match language of 2.a) for consistency and to better define the intent	may cause additional expense to contractor if it stays as routine.	Agree.Clarify in standards.
	Cariboo	B.1.c) our new sign manual dosent have anything in it about color	We should change the wording to say as specified in the standard specs.		Reference standard specifications in Standards.
	Fraser Valley	Centerline Reflectors (Traffic M'tnce)	1-3 class of highways. Need timely placement. Use grooveable ones. Standard for Guardrail Reflectors need to be covered in the standards. Quantifible activity-unit price.	Replacement addressed (Chapt.5-445 C) Standard is part of Barrier Mtce.(Chapt. 1-220)	Agree.
	East Kootenay	Confusion whether one sign face to 1m2 or a number of sign faces to a total of 1m2 constitutes a single sign replacement. Similarly for sign faces from 1 to 3.2 m2	Adjust wording in C.2.d) and e) to state that more than one sign face may make up the total.	Clarification only. Reflects current practice in most areas. Cost neutral or very slight saving to Ministry.	Agree to Clarify.
	Robson	As cost savings measure MOTH to provide all new sign faces and only have unit price for installation at a 'site'. Problem is when we have multiple signs at one location: e.g., Stop sign with 4 G-7's: the credit for replacing the 5 sign faces under preventative is more expensive than a single installation under the Annual Plan activities.	Wording to allow the MOTH to order and supply signs if new. Unit price bid is to only reflect the installation.	Easier to estimate for the MC as the variance in sign face price is taken out of the equation.	Disagree.Leave as is.
	North Peace	COST OF SIGNS & PROMPT DELIVERY	ALLOW CONTRACTOR TO PURCHASE INVENTORY	REDUCTION IN COST BASED ON VOLUMES	Leave as is.
	Howe Sound	Sign washing	"at least once annually after the winter season" should be replaced with some specific dates (one month after end of winter season)	no impact	Agree.
	Howe Sound	Barrier reflectors	Include barrier reflectors in this standard rather than in 1-220 with the same response times as delineators. Also include side and top mount reflectors and either or combinations of both.	Minor increase - improved positive guidance.	Agree.
	Tripartite	**Signs and Delineators**	**No cost savings**		
Highway Surface Reflector Maintenance 5-445					
	Howe Sound	Recessed surface reflectors - m/c doing pavement patches on hwys with recessed surface relectors. M/C should restore these as well	Create activity for re- installing recessed reflectors	no impact - costs would be transferred from MoTH (operations) to M/C (contract).	Agree.Quantify unit price.
Local area standard	Howe Sound	Hours of work - lane closures	to be reviewed		Local area standard.

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	Howe Sound	Recessed or raised reflectors - provide for more timely installations after small Ministry projects(ie rockwork) and new installations to improve safety on curves which did not have them before.After "commencing in spring of each year" add "with completion by April 30."	create new annual activity for new raised/recessed reflectors.	Minor increase.Improved positive guidance systems and date established for after winter re-installs.	Leave as is.Enforcement issue.
Median Antiglare Screens	Lower Mainland	median antiglare screening and/or median weather fencing weather mounted on median barrier/raised channelization or otherwise has no response time noted in the R&B contract.	M.B. mounted items could be address under "Curb Island & Barrier Mtce Stds" however non barrier mounted median fencing does not "Fit" either curb island & barrier or RFMS		Refer issue to Standards review Committee.
	Fraser Valley	Centerline Reflectors (Traffic M'tnce)	1-3 class of highways. Need timely placement. Use grooveable ones. Standard for Guardrail Reflectors need to be covered in the standards. Quantifible activity-unit price.Consult "Pavement Marking Manual" for standard.	Replacement addressed (Chapt.5-445 C) Standard is part of Barrier Mtce.(Chapt. 1-220)	Leave as is
Temporary Pavement Line Marking and Eradication 5-450					
	Howe Sound	Centreline painting - M/C doing pavement patches which can be left for years without being painted because of MoTH budget/scheduling constraints	Create activity for centreline painting and leave it to M/C to arrange tendering/scheduling.This would include foglines,stop bars,turn arrows in either thermoplastic or paint.	no impact - costs would be transferred from MoTH (operations) to M/C (contract) Improved response to line marking requirements with budget protected within maintenance contract.Overall improved road safety.	Leave as is
	East Kootenay	Where maintenance activities, such as patching, eradicate small but crucial areas of pavement markings (especially crosswalks/stopbars in urban areas) there is often a long delay before Ministry is able to re-paint lines.	Include wording that in addition to using pavement marking tape, maintenance contractor is also to "temporarily" paint destroyed pavement markings.	Enhanced safety. Slight increase in cost.	Leave as is
	Central Island	Temporary pavement line painting	Price per meter for Preventative maintenance for line repair after centerline has left district.	cost taken from routine values to cover	Leave as is
Highway Traffic Patrol 5-460					
	Cariboo	Winter patrol times should be reduced for the higher class roads	Reduce response times for class A,B,C		Leave as is
	Lower Mainland	P.4 (xii) roving #1 wrecker was moved to Pitt River Bridge and is no longer on Hwy. #1 (FSP) only to Port Mann Bridge			Agree.
	Howe Sound	Include patrol vehicle requirements for Route 99 (Horseshoe Bay to Porteau) due to limited shoulder widths and continuous guardrail installations for peak hours.	2 vehicles (i ton) as per standard with one south of LionsBay and one north. Frequency as follows:Fnday's : 1400 to 2100 Sundays: 1500 to 2000 Stat. Holidays: 1500 to 2100 (except Christmas and Remembrance Day.	Increase	Local Area Standard
Highway Traffic Control 5-470					
	Lower Mainland	Chapt. 5-470 P.9 indicates 4 ton wrecker at Massey Tunnel, chapter 5-460 (Art 5) states 5 ton.	Make consistent		Agree

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	Howe Sound	M/C response to signal light outages or signals in flash especially during peak traffic periods.	Include specific reference to M/C requirements with regard to signal light outages or signals in flash, with specified response times.	Probable increase, although the current situation is not acceptable as the local police refuse to respond and have indicated in no uncertain terms that the matter is a MOTH issue as they are the owners of the road and Signals. With no specified response times to this type of situation from any party,it is almost impossible to access the Highway from a side road.	Leave as is
Bridge/Tunnel Monitoring Services 5-480					
		No Issues			
Movable Bridge Opening 5-485					
		No Issues			
Bridge Deck Maintenance 6-500					
	North Cariboo	There is no primary or secondary nailing pattern requirement stated for timber planks and also no reference in the SSHC.	Add clause 6-500 B 2 d (xii) "nailing patterns shall be as per Ministry Standard practice, e.g.. 7 spikes per 16 foot plank, or as approved by the Ministry.	No impact as this is industry standard and done now, just no written procedure anywhere.	Larry Brown to canvass and advise(.Minimum of 7)
	North Cariboo	Timber decking tends to rot before wearing out in a number of wet locations.It is costly to replace planks prematurely as a Preventative Maintenance activity for a plank here and a plank there.	Treat the ends of the decking with preservative to extend life of the planks and reduce the need of early replacement.Add the words for decking to clause under section 6-500 2.D (ix):All cuts,holes,notches in treated timber and ends of timber planks will be treated with"	Cost impact could be an increase but in the total picture should be less as it will reduce the need of the single planks Preventative Maintenance costs.	Leave as is.
	Robson	For timber decks there may be some cost savings by having the MOTH stockpile the necessary planking	Unit price with and with out the materials?	Removes the uncertainty of increased wood prices during the five years.	Leave as is.
	South Peace	Requirement to route out concrete cracks prior to cracksealing. Difficulty in following wandering cracks and increased cost for labor & equipment.	Manufacturer specs for low viscosity cracksealants do not require routing and questionable benefit, therefore remove the requirement	Reduce cost to the contractor may translate into reduced PM unit price.	Agree.Use 2 activities.
	Howe Sound	Lions Gate Bridge viaduct steel deck asphalt overlay patching. Lack of bonding between steel and asphalt requires special materials and procedures.	Create special activity for steel deck asphalt overlay patching	increase	Local area standard for now.Reconstruction will eliminate the problem.
	Tripartite	Bridge Deck maintenance	No cost savings		
Bridge Structure Cleaning 6-510					
	Central Island	Bridge Cleaning - Pressure wash cleaning of steel or concrete structures - Existing standard does not result in adequate cleaning of steel structures with low pressure flushing.	Add wording identifying pressure washing as a performance standard for steel and concrete structures where low volume flushing does not remove surface build up of dirt, algae and debris. Suggest adding pressure wash to regular low pressure washing every second year to remove all deleterious materials.	Increased Costs, as requirement is not identified, however work is being done with additional funding where need exists	Leave as is.Change is cost driver.
	Tripartite	Bridge structure cleaning	No cost savings		
Bridge Drain and Flume Maintenance 6-520					
	Tripartite	Bridge Drain and flume Maintenance	No cost savings		

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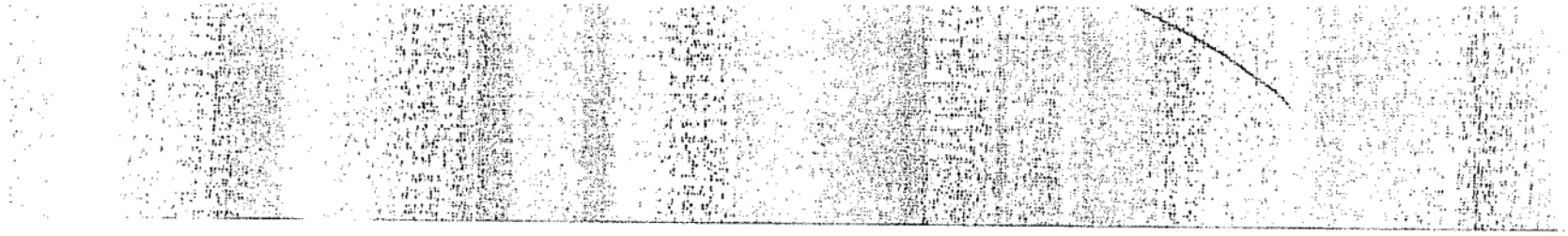
Bridge Joint Maintenance 6-530					
	Selkirk	When this issue is a safety hazard response time should be immediate.	Add Note: Where it is deemed by the Ministry to be a Safety Hazard response time should be immediate.	Impace addresses any safety related issues.	Leave as is.Response to safety defects is immediate for removal of Hazard.
	Robson	The type, size and cost of various bridge joints makes this activity almost impossible to estimate a single unit price for all bridges.	Make the Credited Unit the installation: MOTH to supply the specific Bridge Joint required for the bridge. Alternatively negotiate a price for the repair based on the type of joint and the complexity of the installation, for each specific repair.	Reduces large risk factor to the contractor.	Leave as is.Ministry may not be always able to supply material.
	Central Island	Joint Maintenance - specification not totally clear that AP unit price for armor replacement includes both sides of joint armor in each lineal meter of joint replaced.	Add wording to clarify that both sides of joint armor are included in each lineal meter of unit quantity.	No Cost effect -clarity	Clarify that measurement is 1 side or 2 sides.
	Howe Sound	Joint Seal replacement - method of measurement requires clarification - existing method can result in wide variation of Quantities.			Leave as is.Already in the standard.
	Tripartite	**Bridge Joint Maintenance**	**No cost savings**		
Bridge Bearing Maintenance 6-540					
	Fort George	The bearing replacement on large bridges is unrealistic.	The proposed resolution is that bridge bearing replacement should be restricted to spans less than 50 meters.	The impact would be to reduce the maintenance Contractor's risk.	Leave as is.There is a cap of $35,000 for this work.
	Robson	The type, size and cost of various bridge bearings makes this activity almost impossible to estimate a single unit price for all bridges.	Make the Credited Unit the installation: MOTH to supply the specific bearing required for the bridge. Alternatively negotiate a price for the repair based on the type of bearing and the complexity of the installation, for each specific repair.	Reduces large risk factor to the contractor.	Leave as is.There is a cap of $35,000 for this work.
	Central Island	Bridge Bearings -Single Replacement Quantity covers large and small jobs	Add a PM unit for jobs where replacement costs are low and bearings types are readily available. PM definitions would have to be revised to address replacements of a more specific nature such as large I-beam/girder type bearings and simple box beam neoprene/rubber bearing pads.	Savings.. To have a unit price structure to fit the field requirements. Would also allow us to weed out the big jobs where a another contract method for replacement would be desired, this would reduce contractor risk and increase potential for lower costs	Leave as is.There is a cap of $35,000 for this work.
	Tripartite	**Bridge Bearing Maintenance**	**No cost savings**		
Bailey and Acrow Bridge Maintenance 6-560					
	North Cariboo	Bailey Panels are readily damaged and with it being a Routine Maintenance Activity it is difficult to get replacement of panels scheduled.	Create a Preventative Maintenance Activity for replacement of Bailey Panels.	This would be difficult to say for sure as I don't know how the contractors would bid with this as a routine activity. There are lots of Bailey Bridges with damaged panels varying in seriousness. If it was a PM quantity MOTH would be paying for what is done not speculated to be required.	Agree.Create a Preventative quantity.
	Tripartite	**Bailey and Acrow Bridge Maintenance**	**No cost savings**		
Minor Bridge Structure Painting 6-570					
	Selkirk	Maintenance painting definition in standards refers to "spot" as an area of less than 0.1 m3	Remove the word "spot" in A.2 (a) (i)		Leave as is.
	Central Kootenay	Opening line says "The Contractor will perform minor Bridge structure painting as required on Bridges...is not inclusive enough.	Add "and other structures to that sentence. Ferry ramp wedges, trach racks, walkways, etc. are "other" structures which should be included.	No cost impact.	Agree.

ROUND 5 CHANGE REQUEST

PROVINCIAL SUMMARY

MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
	Robson	Method of Credit for the Timber rail painting. Under 4 Miscellaneous: a) Quantities for PMS ...will be determined by a single horizontal measurement of railing, where a unit measure of railing consists of the entire design structure of the railing including rails,posts and wheelguards.	Clarify with an example.	Clarifies the credit and makes no misunderstanding at unit price bid time.	Agree to clarify.
	Central Island	Timber Rail Painting - Single unit price covers full fence and bullrail only requirements.	Change the existing lineal meters, PM unit to square meters of actual painted surfaces to have re-paint costs fit the different types of rail and areas that we need to have repainted.	Savings, to have a unit price structure to fit the field requirements	Disagree.Leave as is.
	Tripartite	**Spot painting poses many problems,such as environmental,disposal,locations,and quantaties.**	**This standard should be reviewed as it could be a cost driver.**		
Concrete Structure Maintenance 6-600					
	Central Kootenay	Tighter language is required for this standard to define the actual area. Concrete walls, for instance, should be paid for on a "one-side" only or "finished face" basis. There has been some discussion from the contractor as to how this calculation is being made.	Change the language in 6-600 2.a. to define the actual area.		Agree.Clarify to define.
	North Cariboo	Structural Backfill quality not in the performance standards	Add Clause 6-660 B. 2. l) "Backfill will be in accordance with the S.S.H.C. or as approved by the Ministry	Should not impact cost as this is what should have been bid, for such works.	Agree.,
	North Cariboo	Concrete structure maintenance does not reference prestressing cables.	In definitions Chapter 9 change definition of reinforcing steel to read "steel bars, cables, or anchors embedded in concrete structures during forming and manufacture to add tensile strength or resist contraction or expansion."		Agree.
	North Cariboo	Epoxy injection presently is a routine maintenance activity but is in some cases being done as a preventative maintenance item paid for as concrete deck repair but done mostly on abutment/ballast walls. This activity is important to slow the deterioration and if left until applicable as a routine item then it is too late.	Create an activity for epoxy injection that is under the Preventative Maintenance Plan as a lineal meter accomplishment.	Will reduce the risk of the unknown for the MC and allow a more accurate account of what should be paid for. It will allow the Ministry to better manage the deterioration and reduce rehabilitation costs over the long run by preserving the structures.	Agree.Measurement to be Lineal Meter.
Steel and Aluminum Structure Maintenance 6-605					
	Tripartite	**Steel and Aluminum Structure Maintenance**	**No cost savings**		
Timber Truss Bridge Maintenance 6-620					
	Robson	Problems with which members are credited and which are not.	May need individual drawings or assessments of bridges, or work plans indicating which are credit items and which are routine.		Clarification required.
	Central Island	Timber Truss Maintenance - Timber truss tension rod dropping, inspection and replacement. Somewhat vague in that all work is under single unit price if rod replaced or not.	Clarify wording so replacement of rods are incidental at time of drop and inspection under single unit price, or reduce risk by having a price for rod replacement in addition to a price for dropping for inspection, Rod cost would be low as all preparation with dropping procedure will be in place.	Minor saving possible, more clarity.	Replacement is Preventative and Inspection is Routine.Cannot replace at time of inspection.



ROUND 5 CHANGE REQUEST

PROVINCIAL SUMMARY

MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
	Tripartite	**In this standard,some timber truss members are replaced under Preventative Maintenance while others are not.**	**All members of the timber truss bridge that require replacing should be included in the Preventative Maintenance Program unless they are concidered to safety essential requiring a routine response.MOTH agreed to clean up language to make standard clearer**		
Bridge Piling Maintenance 6-640					
	Robson	The type, size, location and cost of replacing various piles makes this activity almost impossible to estimate a single unit price for all bridges.	Negotiate a price for the repair based on the type of piling and the complexity of the installation, for each specific repair.	Reduces large risk factor to the contractor.	Leave as is.Already two types in the standard.
	North Island	- supply of 12 - 50 foot treated timberpiles in stock at all times	Have a "Letter of Understanding" for immediate supply and delivery from local supplier.	MOE/DFO do not allow creasote treated piles in fresh water.	Remove stockpile requirement from standard.Ministry to take on this function.
	Tripartite	**Bridge Piling Maintenance**	**No cost savings**		
Timber and Log Structure Maintenance 6-650					
	Robson	For timber and log structures there may be some cost savings by having the MOTH stockpile the necessary materials for repairs.	Unit price with and with out the materials?	Removes the uncertainty of increased wood prices during the five years.	Leave as is.
	Central Island	Timber and Log Structure Maintenance - Single unit price for brow logs where needle beams are incidental. We are mixing needle beam costs with every brow log. Sometimes needle beams are used without any brow logs and in most situations only one needle beam is required for two brow logs.	Change Brow log unit price to be for either a brow log or needle beam. Required hardware, brackets or lashing should remain incidental.	Savings as cost will better reflect each component.	Agree.
	Tripartite	**Timber and log structure Maintenance**	**No cost savings**		
Retaining Structure Maintenance 6-660					
	Central Kootenay	Right now under Preventative 2.a. it only specifies the replacement of timber or log retaining structures. These types of structures as replacements are not always economical or viable. It is often worth the contractor's while to explore the use of other materials such as lock blocks,metal bin walls, or even poured in place concrete walls.	Contractors should have the option in the standards to choose which option would be more economical or viable.	Price per m3 should not change.	Add "or other materials as approved by the Province."
	North Cariboo	Structural Backfill quality not in the performance standards	Add Clause 6-660 B. 2. l) "Backfill will be in accordance with the S.S.H.C. or as approved by the Ministry	Should not impact cost as this is what should have been bid, for such works.	Agree.
	Tripartite	**Retaining Structure Maintenance**	**No cost savings**		
Multiplate Structure Maintenance 6-680					
	North Cariboo	Panel replacement for cracked or damaged Multiplate panels. The same issue: it is difficult to get the contractor to replace anything under routine.	Create a PM activity for multiplate panel replacement.	Same issue are we paying for it under specifation or not?	Include Preventative Maintenance Quantity for pannel replacement.(measurement is M2)
	Tripartite	**Multi Plate Structure Maintenance**	**No cost savings**		

ROUND 5 CHANGE REQUEST

PROVINCIAL SUMMARY

MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
Dock and Ramp Maintenance 6-685					
	Tripartite	All maintenance on ramps and docks should be included in Annual Maintenance and Preventative Maintenance Programs.	MOTH review to consider quantifying some components.		
Bridge Railing Maintenance 6-690					
	Tripartite	Bridge railing Maintenance	No cost savings		
Movable Bridge Maintenance 6-700					
	Tripartite	Moveable Bridge Maintenance	No cost savings		
Floating Structure Maintenance 6-710					
	South Okanagan	Contractor is responsible for a portion of the electrical on the Bridge and MoTH is responsible for the remaining. This is causing problems coordinating maintenance and confusion.	Remove Contractors electrical responsibility from standard and give responsibility to MoTH Electrical Brach	COST DECREASE for the Contractor, approx. $30,000	Refer to electrical supervisor for comments.
	Tripartite	Floating Structure Maintenance	No cost savings		
Bridge Traveler Maintenance 6-720					
	Tripartite	Bridge Traveller Maintenance	No cost savings		
Tunnel and Snowshed Maintenance 6-730					
	Tripartite	Tunnel and Snow Shed Maintenance	Rewrite to confirm that traffic control costs are included in the $35,000 expenditure cap.		
Debris Torrent Structure Maintenance 6-740					
	Robson	Possibly reduce the cap or include in a general "Event Response" standard which has a cap for all such occurrences in the district. Bid price will include some price for this activity but may not be used or may be used several times in the contract.	Amalgamate with "Event Response" type of general standard	Reduces large risk factor to the contractor. Will need a dedicated fund at District Level or access to Emergency/Contingency Funds.	Leave as is.
	Howe Sound	Better clarification of m/c requirements with regard to debris chute maintenance.	Better contract/standard language to resolve on-going dispute on maintenance responsibilities regarding cleaning of outfall and maintenance of debris chutes.	Probable increase in maintenance Decrease in major infrastructure repair costs.	Leave as is.Already in standard (May look at clarification in rewrite.)
	Tripartite	Debris Torreny Structure Maintenance	No cost savings		
Reaction and Aerial Ferry Maintenance 6-750					
	Tripartite	Reaction and Aerial Ferry Maintenance	No cost savings		

ROUND 5 CHANGE REQUEST

PROVINCIAL SUMMARY

MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
Flood Control and Washout Response 7-760					
	East Kootenay	Problems of definition, e.g., flood vs. mudslide, makes it contentious to determine whether the $5000 cap has been reached.	Maintain the two-tiered cap but have it encompass both 760 & 770. In effect, only two events of either type would be needed before the cap is reduced to $5000 (instead of the current 4 in total).	Easier to administrate, less contentious. Less risk to the maintenance contractor - lower contract cost. Potential for higher cost to other Ministry budgets.	Leave as is.
	Robson	Like other "Event Response" activities there is a large amount of risk involved for the MC. May have many, many small events which do not trigger the initial cap. Very difficult to estimate for bid purposes.	Amalgamate with "Event Response" type of general standard. This would include Washouts and Floods, Mud , Earth and Rockslide, Snow Avalanche Response, Structural Damage and Debris Torrent Structure Maintenance. Create a total cap of $50,000 or $100,000 (based on historical data) against which all events over $5,000 would qualify.Define the applicable events.Separate the emergency response portion from the repair portion.Could also be funded like an annual plan item.	Reduces large risk factor to the contractor. Will need a dedicated fund at District Level or access to Emergency/Contingency Funds.	Leave as is.
	North Peace	RISK AND COSTS ASSOCIATED WITH EMERGENCY SITES	REMOVE B.2.d) & B.2.e) OR MAKE ALL SITES B.2.e).	$50,000 + # occurrences X $5,000 DEPENDANT ON # OCCURRENCES.	Leave as is.
	Tripartite	**Proposal for Full Tripartite Table**	**1) Contractor first response could be for traffic control and making the area safe. 2) Guarantee the work to the contractor based on the additional work prices negotiated at contract renewal.**		**DO NOT AGREE**
Mud,Earth and Rock Slide Response 7-770					
	Okanagan-Shuswap	High cost of emergency rates	The $5,000 & $25,000 caps should be removed Emergency rates in effect until sites safe. Negotiate rates from that point until completion.	Reduction in costs (risk factors) also the Ministry would be able to give additional site work to the contractor..	Leave as is.
	Fraser Valley	Mud, Earth and Rock Slide Response	Debris Flows.		What is the issue?
	Robson	See Flood and Washout Response		Reduces large risk factor to the contractor. Will need a dedicated fund at District Level or access to Emergency/Contingency Funds.	Leave as is.
	North Peace	RISK AND COSTS ASSOCIATED WITH EMERGENCY SITES.	REMOVE B.2.c) & B.2.d) OR MAKE ALL SITES B.2.d).	$50,000 + # occurrences X $ 5,000 DEPENDANT ON # OCCURRENCES.	Leave as is.
Highway Accident Response 7-780					
	Fraser Valley	Highway Accident Response	Double and triple billing going on. Standard needs complete revision. Car and truck fires should be covered. (Local Area Standard).		Refer to 1997 clarification letter and include this in standard.Practice is contrary to contract Enforcement issue.
	Fraser Valley	Highway Accident Response	Traffic control for Emergency Conditions in adjacent contract areas.	Increase	Clarify responsibility.
	Robson	Large variance in numbers, length of response, etc. creates a large risk for contractor. Differing levels of expectations also make it difficult to administer.	Possibly make a funded 'cap' for all events over $2,500. Under $2,500 is routine. Any event with Damage to Gov't Property is recoverable via insurance. Any event over $2,500 with no damage is recoverable through MOTH.	Reduces large risk factor to the contractor. Will need a dedicated fund at District Level or access to Emergency/Contingency Funds	Leave as is.
Snow Avalanche Response 7-790					
	Fraser Valley	Snow Avalanche Response	Gun Placements- needs to be added.	Increase	Add wording to specify "Gun Placements"(include in definitions)
	Selkirk	Contractor not beginning soon enough.	Change Sections (c) (vi) and (vii) to same response time as for (v)	No cost impact.	Leave as is.Change is a cost driver.

ROUND 5 CHANGE REQUEST

PROVINCIAL SUMMARY

MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
	Robson	See Flood and Washout Response	See Flood and Washout Response	Reduces large risk factor to the contractor. Will need a dedicated fund at District Level or access to Emergency/Contingency Funds.	Leave as is.
Structural Damage Response 7-800					
	Robson	See Flood and Washout Response	See Flood and Washout Response	Reduces large risk factor to the contractor. Will need a dedicated fund at District Level or access to Emergency/Contingency Funds.	Leave as is.
	North Peace	RISK AND COSTS ASSOCIATED WITH EMERGENCY SITES.	REMOVE B.2.d) & B.2.e) OR MAKE ALL SITES B.2.e).	$50,000 + # occurrences X $ 5,000 DEPENDANT ON # OCCURRENCES.	Leave as is.
	7-800P?	Minor structural improvements which are outside the scope of Routine but are not identified as unit quantities under AP and PM. Work of this nature is currently being done, costed and then charged to an AP or PM activity by converting to a unit.	Create a standard and activity number for Bridge Minor Structure Repair. The R&B Contract would then be the most cost-effective method to carry out this work. Could have a financial cap to prevent using the activity to circumvent the BAS.	Minor improvements would be possible with minimal paperwork and using existing minor rehab (PM/AP) funding, best cost/benefit and would represent actual work accomplishments.	Leave as is.Deal with locally.
Bailey and Acrow Emergency Installation 7-810					
	North Island	- supply of timberdeck materials in stock at all times; stock needs rotating		Cost associated for Emergency Services is usually more expensive than finding a supplier on short notice.	Leave as is
Highway Inspection 8-830					
	Okanagan-Shuswap	Not all districts have requested this report.	Re-word: The contractor will upon request from the Ministry within 7 - 8 days.		Agree.
	Robson	Wide variance in enforcement and level of effort for MC.	Possibly Standardize forms, establish some frequencies for culvert inspections, seasonal inspections, road inspections based on class, etc.	Should clarify the requirement to do inspections.	Leave as is.
	North Peace	B.4.d) - NOT BEING DONE	REMOVE OR ENFORCE	?	Enforce.
Highway Patrol 8-840					
	North Peace	B.4.d) - NOT BEING DONE	REMOVE OR ENFORCE	?	Enforce.
	Cariboo	Winter patrol times should be reduced for the higher class roads C.1.b).	Reduce response times for class A,B,C		Leave as is.
Bridge Inspection 8-850					
	Robson	Wide variance in enforcement and level of effort for MC.	Possibly Standardize forms, establish some criteria to ensure the bridges are thoroughly inspected.	Should clarify the requirement to do inspections.	Leave as is.
	North Peace	DUPLICATION (INSPECTION AND PATROL)	COMBINE 830 & 840	?	Leave as is.
	Central Island	Bridge Inspection - New WCB "Enclosed Spaces" Inspection requirements We have structures that require enclosed spaces inspections but quite infrequently. Consequently if included in MC specs to meet new WCB Regs. and existing MoTH specifications we have the potential to be paying routine dollars for a type of inspection we don't require as inspection frequency is 5 - 10 years.	Change wording in Maintenance Service/Routine Maint. Ser. and/or Miscellaneous section to exclude inspection of Enclosed Spaces from contractor inspections. Frequency is from 5-10 years and is very specialized, MoTH could minimize costs by organizing in-house inspections or hire a qualified consultant to organize and perform the inspection with BAM and MC rep on board.	Savings, if contractors add cost to routine inspection, reduced risk to contractor	Leave as is.

ROUND 5 CHANGE REQUEST

PROVINCIAL SUMMARY

MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
Highway and Structure Maintenance Definitions					
		No Issues.			
Maintenance Agreement					
	Howe Sound	Art 5 & Art 7 in Mice Contract Year.	Inventory of new structures that exceeds 2% cap during a contract yr. for AM/PM.	New or replacement structures covered by a warranty clause(Cost Decrease.)after completion date, should not be part of the calculation(meters costing)	Leave as is.
Quality/Management Assurance Program					
	Lower Mainland	section 8 - culverts/flumes/curbs not included in count	(not accurate) for MAS percentages		No Comment
General Comment:(South Peace) We believe all the Standards should be returned to the position that they are the minimum accepted level of service. If this means lowering the level to maintain the cost, so be it.					No Comment
This also means a fairer competitive process, currently lacking, because the incumbent knows which Standards are enforced and which are not.					
If the Business Plan is to be the yardstick for determining the ability of the Contractor to meet the Standards, much greater diligence is required to ensure the resource plan is able to meet the Standards.					No Comment
North Peace	GENERAL	ELIMINATE THE "NINE PRINCIPLES"	MOTH & CONTRACTOR TO FOLLOW CONTRACT	BETTER SERVICE TO PUBLIC	No Comment
North Peace	GENERAL	EXISTING STANDARDS BELOW MINIMUM LOCAL NEEDS.	LOCAL STANDARDS	MAY INCREASE CONTRACT VALUE	No Comment
North Peace	GENERAL	VALUE ATTACHED TO STANDARDS	SET REALISTIC CONTRACT VALUES	MAY INCREASE CONTRACT VALUE	No Comment
North Peace	GENERAL	MINISTRY VIEW OF STANDARDS	MINISTRY TO COMMUNICATE LEVEL EXPECTED	?	No Comment
New Standards Required:					
Settlement Ponds	North Island	- no standard present	- create Maintenance activity, adopt VIHP maintenance guide, bio works in Engineered Wetlands to remain a MoTH responsibility.	Increase $	Incorporate into standards.
Sealcoat Roads	Cariboo	To extend our life of sealcoat roads & reflect what many Districts are doing we should introduce a standard for maintaining sealcoat roads as a compact standard	Introduce a new standars for maintenance for sealcoat roads as a compact standard(where temperatures allow it)		Leave to local agreements.
Environmental Monitors	North Island	- no mention in any standard	- add to all standards where it is required	Increase $	Clarify the requirement for Environmental Monitors in the standards.Decision on who pays is defered.
Non Standard Related Issues:					
?ADT	Central Island	Summer classifications are variably AADT or SADT	Standardize Provincially, to either AADT or SADT.	Variable by District.	Clarify definition with Planning.(Incorporate correct term into contract.)
Work Identification	North Island	- no set schedule for road inspection	- add a frequency of 2 per year of complete road inspections (routine, PM and AP activities)		Set frequency to Spring and Fall.
Quarterly Plans	North Island	- too frequent	- go to seasonal plans (2 per year)	Maintenance Contractor time savings	Already done.

ROUND 5 CHANGE REQUEST

PROVINCIAL SUMMARY

MAINTENANCE STANDARD	REGION - DISTRICT #	ISSUE	PROPOSED RESOLUTION	IMPACT (ie cost increase/decrease)	Comments as per April 7 Approval meeting
6-510/570/630	Central Island	Contract requirement for MC to make contact with Environmental Agencies (EA) and meet all their requirements for maintenance work. Over the last couple years a requirement has developed for Private Environmental Monitors (EM) hired for maintenance activities as a result of lower MOE/DFO personnal levels.Contractor can be faced with risk of significant cost increase on a situation by situation basis depending on local MOE/DFO requirements.	Original Specification did not envision EM's would be hired by either MoTH or MC's for maintenance activities (I was a Bridge Writer). But now are being requested by EA's to hire these EM's for maintenance and small rehab works performed by MC's. Clarify Specs that either 1/ EM's are included with MOE/DFO requirements (not prefered),or 2/ Have MOTH hire and supply EM as required by MOE/DFO.EM reports under option 2/ would be MOTH property,MOE/DFO are more comfortable with MOTH control and involvement at this level.	Option Costs:1/ Higher costs with more risk to MC (not preferred).2/ Savings over option 1/ Most reasonable cost control however cost for EM would be to District account	Clarify the requirement for Environmental Monitors in the standards.Decision on who pays is defered.
Local Area Stand Weather Patrol	Howe Sound	Rewrite operations manual placing more responsibility on monitoring (both patrol and weather station) on the contractor.	Re-write of manual by Avalanche section placing more requirements on M/C as per DHM's instructions.	Increase maintenance cost.Decrease District costs	Local Area Standard
Local Area Stand Hours of Work	Howe Sound	Review hours of work on Hwy. 99	Include reference to delay expectations of 20 minutes or longer. Limit lengthy type delays and specified activities to night time hours only between Squamish and Porteau.	Improved traffic management with more work done during non-peak hours and less disruption to the public.	Local Area Standard

MEMORANDUM

To: Nicole Pharand-Fraser & Shawn McKinley

From: Andrew Stewart

Client: MOT

Re: Winter Specifications / Spec 3-300 Highway Snow Removal

File No.: 25339

Date: February 15, 2003

At the Project Board Meeting held on Jan 31 one of the issues raised was how to handle the Contractor obligations to meet the time frames for snow removal, when there is an extraordinary snow event. In these cases it is anticipated that meeting the performance time frames for Maximum Allowable Accumulations would not be possible.

So the idea is to provide a "saving" provision that states if the Contractor has:

a. met the requirements for proactive observations, monitoring etc., and

b. deployed all of their resources continuously,

then, if they can't stay ahead of the accumulations as required by the spec time frames, they are not considered to be in breach.

I suggest the following be included in the Snow Removal Spec as paragraph 3.1.1g):

> "g) The Contractor will not be deemed in breach of the performance time frames included in paragraphs 3.1.1, in the event of a snowfall of extreme accumulations and extended duration, if:
>
> i) the Contractor has complied with paragraphs 3.1 b), c) and d); and
>
> ii) the Contractor continuously deploys all of its resources, for the duration of the snowfall, in an effort to meet the performance time frames included in paragraphs 3.1.1. "

Perhaps we should consider being more specific about what "a snowfall of extreme accumulations and extended duration" actually is. You will have a better idea of that ie. accumulation amounts and duration time.

Do you think this, or something similar, needs to be included in any of the other Winter Specs ?

AS

cc J. Newhouse
R. Fredrickson

3-300

Pharand-Fraser, Nicole TRAN:EX

From: Fredrickson, Reg TRAN:EX
Sent: Thursday, September 05, 2002 1:03 PM
To: Pharand-Fraser, Nicole TRAN:EX
Subject: RE: winter standards

Nicole;
My only comments are that in the winter plowing that the contractor should "commence plowing immediately" vs the 90 minute response. If they don't start immediately then they will often wait making their response at the end of a route far to long after the snowfall has commenced. I could be persuaded to go to 30 min., but no longer than that.

In the grading I think the max limit should be pass km's and not grader hours. I'm not really hung up on this one though and could be persuaded either way.

Thanks

Reg

-----Original Message-----
From: Pharand-Fraser, Nicole TRAN:EX
Sent: Wednesday, September 04, 2002 4:26 PM
To: Buckle, Jon TRAN:EX; Freer, Geoff TRAN:EX; Keiser, Wayne TRAN:EX; Cooper, Tracy TRAN:EX; Duncan, Dave TRAN:EX; Lachmuth, Grant TRAN:EX; Proudfoot, Mike TRAN:EX; Mackay, Bruce TRAN:EX; Newhouse, John TRAN:EX; McKinley, Shawn TRAN:EX; Fredrickson, Reg TRAN:EX
Subject: winter standards

To the members of the 2003-2004 Highway Maintenance Contract Board - as promised at the meeting last week and to the Standards Working Group

Here is the latest draft of the two major winter standards: 'Winter Abrasive and Chemical Snow and Ice Control' and 'Snow Removal'.

<< File: Abravises Chemicals Sept4.doc >> << File: Snow removal Draft Sept4.doc >>

Those of you who were at the meeting last Friday received a hard copy of the latest draft of the Grading standard. Here is the electronic version for those of you who didn't get a copy.

<< File: Grading Draft Aug 29.doc >>

I would appreciate your comments/feedback on all three standards by Wednesday, September 11.

Nicole Fraser
Administrator
Maintenance Standards and Quality Assurance
(250) 387-7646

Highway Snow Removal Maximum Allowable Accumulations

Note: this document is provided for discussion purposes and to provide a linear approach to a complex topic and should be considered an in progress rather than a final version

Time: 12/03/02 10:54 AM

Objective

To develop contract language that provides achievable and measurable performance objectives that parallel Ministry expectations for the Highway Snow Removal Specification during significant storm events.

Discussion

1. Present contract language does not provide tolerance for exceeding MASA (Maximum Allowable Snow Accumulations) regardless of the severity of the storm. The Province has provided tolerance when Contractors exceeded MASA during "above average" storm conditions. The amount tolerance shown in contract and service areas has been inconsistent and any tolerance is in conflict with present Maintenance Standards.
2. The tolerance to exceed MASA was given some support by the "9 principles" whereby "under normal circumstances the resource levels provided within Contractor Business Plans are considered sufficient. It is clear that the cost associated with providing sufficient contingency to achieve standard in all areas during severe conditions would be unreasonably high.
3. The winter maintenance standard specifies lower MASA on higher-class roads thus establishes increasing priorities from Class E to class A roads. It also establishes maintenance objectives/targets.
4. The depth of snow is one of several factors that influences level of service, but is the only factor presently considered. The moisture content of snow can have significant effects on vehicle traction and steering, for example one or two cm of slush can significantly affect steering of light vehicles. Snow with higher moisture content at near freezing temperatures tends to pack and form icy conditions more that light snow during very cold conditions.
5. **Snow Removal in practice is a program, which if properly planned and executed delivers the highest level of service with resources available. How a snow removal program sets plow patterns and frequencies by integrating local knowledge of micro climates grades, road profiles, and traffic patterns is as important as snow depth during a storm cycle. Certainly, during a severe storm cycle, public expectation is to see evidence of an effective program and reasonable return to normal rather than a focusing on depth of snow accumulations alone.**
6. One of the most important factors in highway safety is consistency in road conditions. An example of inconsistency affecting safety is when vehicles are travelling relatively high speed in bare wheel paths but run into problems steering when encountering slush at centerline or between wheel paths, even though accumulations are within standard.

Discussion Continued:

7. Two winter standards Highway Snow Removal and Winter Abrasive and Chemical Application to a large extent work in parallel. The Highway Snow Removal Standard requires the contractor to keep accumulations on the traveled surface below a threshold while Winter Abrasive and Chemical specifications defines maximum response times for contractor to restore traction to slippery road surfaces. The response times for Winter Abrasive and Chemical application Specification is achievable, however the definition for slippery or what constitutes restoring traction are not adequately defined. This briefing does not address the slippery or traction definitions but they will need to be clarified within the new standards rewrite such that trigger points and effectiveness of response can be determined .
8. Highway Snow Removal represents a significant portion of Maintenance Budgets and minor changes to response times, patrol cycles and MASA could have large cost implications. Incumbent contractors recognize present levels of tolerance that, to a large extent, is defined by both public and area manager's past acceptance/expectation to contractor storm response. Providing contingency resources above standard shift patterns has an expectation of the contract, although not quantified.
9. Aligning Ministry expectations for highway snow removal with Maintenance Contract Specifications is necessary to;
    - Facilitate knowledgeable bids
    - Reduce conflicts
    - Facilitate uniform administration of contracts
    - Reduce potential for litigation
    - Reduce risk of contract failure from several severe or extended winters

Proposal 1: Status Quo.

Continue with requirement for contractors to remain below maximum allowable accumulations with no tolerance provided in contract language.

Negative

a) Does not facilitate knowledgeable bidding
b) Potential for conflict in field re differences in opinion re levels of tolerance acceptable
c) Not achievable therefore requirement not clear
d) Would likely result in varying efforts and levels of service between contract areas
e) Storm severity could determine contractor performance
f) Risk exposure to severe conditions not limited
g) Does not reflect either public or Ministry expectations
h) Is not consistent with past and present practice

Positive

a) measurable

Proposal 2: ADMEL

Area Defined Minimum Equipment Level

The ADMEL is defined by the Contractor for an area specified (foreman) by the Contractor. All units forming ADMEL must be integrated into the current respective contractor plan for addressing the storm event. ADMEL resource level considers only units operating per their respective function by trained operators on the Highway within the specified area. ADMEL does not include out of service time such as but not limited to maintenance, breakdown, servicing, fuelling, travelling to or from defined work area. ADMEL does include time to travel for and loading of chemicals and abrasives and scheduled operator breaks. ADMEL can be any Contractor predefined combination of snow removal and chemical application equipment. Substitute equipment will be considered if the substitution rate ratio is predefined and equipment is compatible with contractor operational plan. It is understood that appropriate contingency/additional equipment above ADMEL must be determined by the contractor such that during the entire time in which maximum accumulations are exceeded, the contractor will not fall below the ADMEL level specified.

This proposal generally reflects criteria that presently is (or should be) used to determine flexibility or tolerance for times when a contractor has not been able to keep within maximum allowable accumulations. During those times focus shifts from snow depth to the effectiveness of the contractors plan and resource levels (Business Plan) . Of principle importance is that the plan, including equipment levels is set by the contractors.

Past criteria for evaluating tolerance would consider

- Does the contractor have a reasonable amount of his fleet based on the Business Plan for the foreman area out on the road?
- Is the contractor executing an effective plan that reflects area priorities
- Does the contractor catch up/ clean up in a reasonable amount of time

Negative

a) Could be viewed as a reduction in standard (if past expectation was based on requirement to always be in standard)
b) Is not end product oriented but rather program oriented

Positive

a) Is achievable
b) Limits contractor exposure to above normal winter storms
c) Facilitates "knowledgeable" bidder
d) Requires implicitly for contractors to develop programs/commitments which parallels ISO principals
e) More closely reflects Ministry expectations during severe conditions

Proposal 2
Positive cont.

f) Reflects public tolerance to reduced levels of service during severe conditions
g) Reflects the reality that winter maintenance is a program, not a project.
h) Measurable (at the end of a storm cycle contractor can provide documentation as to resources applied)

Note: a possible modification to the ADMEL would be for contractor to define threshold storm severity or maximum number of hours allowed in ADMEL prior to increasing equipment levels or modifying plan and if area returned to standard in less time then contractor could reduce the ADMEL.
Alternately a minimum cycle time for Class A and B highways could be introduced with the ADMEL.

Proposal 3 Maximum Cycle Time

When the Contractor exceeds MASA for a specified area, based on the class of road, the Contractor provides a maximum cycle where MASA is exceeded.

Negative
a) Provides foreman with an additional complexity in the plan that in all cases may not reflect optimal usage of resources.
b) Is not end product
c) Result of pass is not considered (i.e. plowing minimum of 3 meters underbody vs. 4.5 meter with wing) therefore does not encourage more efficient equipment

Positive
a) Potentially better acceptance by public as visual
b) Implicitly defines minimum equipment levels
c) Achievable
d) Closer to end result than ADMEL

Note: potential consideration that a defined area is made up of several classes of road, each of which has a length and width requiring plowing. This equates to a specified area that needs to be addressed after or during a snowfall. Considering this fact, cycles vs. width plowed could represent a portion of that area per hour. Therefore capacity or ha/ hour of plowing could also be a requirement with cycle time.

Conclusions:

Presently, the ADMEL would appear to most closely reflect past practice, however it is recommended that an additional condition to reflect cycle times be implemented with the ADMEL.

3-30

B.C. MINISTRY OF TRANSPORTATION

Maintenance Standard

WINTER ABRASIVE AND CHEMICAL SNOW AND ICE CONTROL

A. OBJECTIVE

The Contractor will perform WINTER ABRASIVE AND CHEMICAL SNOW AND ICE CONTROL as required on Highways to restore surface conditions ~~on the Highways~~ which constitute or have the potential to create an unsafe condition for the traveling public or other Highway users by:

i. restoring surface traction;
ii. preventing the development of a bond between compact snow and the pavement surface on Class A & B Highways when an event is forecast;
iii. notwithstanding ii above, getting to bare pavement in optimum time;

why "when forecast"??

OR: "restoring bare pavement conditions"

B. END RESULT SPECIFICATIONS

The Contractor will respond to Slippery conditions in accordance with the response times set out below notwithstanding that the Contractor will ensure patrol vehicles take action to restore surface traction by immediately applying Winter Abrasive and/or Chemicals when Slippery conditions are encountered.

When snowfall, black ice, freezing rain, dropping or increasing temperatures are Forecast, the Contractor will commence the following operations immediately:

- Increase snow and weather monitoring; observations and
- Increase forecast monitoring;
- Institute patrols and /or increase patrols;
- Notify/deploy resources;
- Communicate internally and externally;

- would patrols not already be "instituted" by Patrol Standard?
- If so, this infers we acknowledge deviations

The Contractor will rely on weather and forecast information to determine which combination of anti icing, deicing and/or abrasive materials to use. assist in determining

and other appropriate means

"Rely On" - may not be best wording. Contractor is responsible to meet Standard. If weather info is flawed, Contractor can claim he "relied" on it...

Is Forecast a glossary term? For F"?

On Class A & B Highways, resources will be deployed 90 minutes in advance of a forecasted event and the Contractor will take appropriate measures to prevent ~~the~~ bond from occuring between the snow and the pavement surface on the Travelled Lanes.

On the Travelled Lanes of all other Highways, abrasive and/or chemical application will commence immediately, when the forecasted condition occurs.

The Contractor will give priority response to school zones, intersections, curves, hills, and Bridge Decks, accident sites and any other location on the Highway which could present a hazard to the traveling public and other Highway users.

When snowfall, black ice, freezing rain, dropping or increasing temperatures occur that are not forecast, the Contractor, will deploy resources immediately upon notification or detection of the condition.

The following table establishes the maximum response times within which the Contractor will have restored traction, commencing from initial detection by or notification to the Contractor:

		Winter Highway Classification			
		A	B	C	D
(i) during snowfall, freezing rain, black ice	hills over 5% gradient (one lane each direction)	60 minutes	90 minutes	2 h	4 h
	curves under 60 kilometres per hour	60 minutes	90 minutes	2 h	4 h
	school zones & intersections	90 minutes	2 h	3 h	6 h
	other locations	2 h	3 h	4 h	8 h
(ii) after snowfall	all hills (all lanes)	5 h	8 h	24 h	2 d
	all curves	5 h	8 h	24 h	2 d
	all other locations	24 h	36 h	3 d	as required

(iii) when slippery surfaces are encoun-tered during patrol	all locations	immediate application	immediate application	Immediat e applicatio n	immediat e applicatio n

Legend
h – hours
d - days

The following table establishes the maximum response times within which the Contractor will have removed compact snow or ice remaining on paved Highway surfaces after snowfalls have ended and plowing operations on the Traveled Lanes have been completed.

Winter Highway Classification			
A	B	C	D
2 d	3 d	7 d	28 d

Should this be defined? i.e. = temperatures °C" below —?

Legend
d – days

Note: Notwithstanding the above, extended periods of extreme cold will be taken into consideration with respect to response times.

Materials

Chemicals used in snow and ice control must be accepted in writing by the Province for use on the Highways.

The maximum allowable particle size for Winter Abrasive materials, and the mean Gradation limits for these materials when tested according to ASTM Designations C136 and C117, is as follows:

	Winter Highway Classification		
	Class A & B	All Class C and Class D paved only	All Class D gravel Highways
(i) Maximum particle size	12.5 mm	16 mm	19 mm

(ii) metric screen size			
19 mm	N/A	N/A	100
16 mm	N/A	100	N/A
12.5 mm	100	N/A	N/A
9.5 mm	N/A	80-100	80-100
4.75 mm	50-95	50-95	50-95
2.36 mm	30-80	30-80	30-80
0-600 mm	10-50	10-50	10-50
0-300 mm	0-25	0-25	0-25
0-075 mm	0-6	0-6	0-6

Note: The figures shown under section B.1.a)(ii) above represent the percent of material which passes that particular screen size.

No "Non-Compliance" Section C ?

??

B.C. MINISTRY OF TRANSPORTATION

Maintenance Standard

HIGHWAY SNOW REMOVAL

A. OBJECTIVE

The Contractor will perform HIGHWAY SNOW REMOVAL on Highways as required to remove loose snow and slush, compact snow and to expose highway surfaces.

B. END-RESULT SPECIFICATIONS

The Contractor will ensure that snow accumulations remain below the maximum allowable accumulations, to the full width of the Traveled Lanes, consistent with the Highway Classification as set out in this standard.

When snowfall is forecast, the Contractor will commence the following operations immediately:

- Increase snow and weather observations and monitoring
- Increase forecast monitoring
- Institute patrols and /or increase patrols ← see Winter A6. comment
- Notify/deploy resources
- Communicate internally and externally

When the forecasted snowfall occurs, snow and slush removal will commence immediately.

When snowfall occurs that is not forecast, the Contractor, immediately upon notification or detection of snowfall, will deploy resources and the Contractor will commence removal of snow and slush within 90 minutes (some have suggested that the Contractor should start sooner).

45 minutes

a) Highway surface plowing

(i) The Contractor will complete surface plowing to remove loose snow and slush to expose paved or compact highway surfaces on all Traveled Lanes on Winter Class A, B, C and D Highways within 2 days of the last measurable snowfall.

(II) Subject to section (i) above, the following table establishes the maximum allowable total accumulations on each Highway Traveled Lane:

Winter Highway Classification	Maximum Allowable Accumulation (cm)		
	One Lane Each Direction	Second Lanes	All Other Lanes
A	4.0 cm	6.0 cm	15.0 cm
B	4.0 cm	6.0 cm	20.0 cm
C	15.0 cm	20.0 cm	n/a
D	25.0 cm	n/a	n/a
E	30.0 cm	n/a	n/a

A. The Contractor will establish and follow a plan which includes sufficient and appropriate resources considering plowing routes and priorities such that all the Highways of that Class within the Service Area will be plowed before the maximum accumulation depth is reached.

B. The Contractor will develop and follow a timetable for plowing school bus routes in consultation with the local school district to ensure optimum school bus service.

C. The Contractor will develop and follow a timetable for plowing key commuter and industrial routes in consultation with local stakeholders, including but not limited to the local industries (forestry, mining, oil and gas), the RCMP, local and regional governments to ensure optimum service to commuters and local industry.

b) compacted snow or ice on pavement surfaces d.

The following table establishes the maximum periods of time from the end of a measurable snowfall within which the Contractor will remove compacted snow or ice from all travelled lanes with paved Highway surfaces:

Winter Highway Classification			
A	B	C	D
2 d	3 d	7 d	28 d

Legend

d – days

Note: Notwithstanding the above, extended periods of extreme cold will be taken into consideration with respect to response times.

see earlier comment

c) Shoulder clearing

The following table establishes the maximum periods of time from the end of measurable snowfall within which the Contractor will have pushed snow and ice back beyond the Shoulder edge:

Should this be reduced ?

Winter Highway Classification			
A	B	C	D
4 d	7 d	7 d	28 d

Legend
d – days

Note 1: Notwithstanding the above, on Class A and B Highways at all Superelevated curves or locations where the Shoulder edge is higher than the Traveled Lanes, the Contractor will have pushed snow and ice fully back beyond the Shoulder edge within three days of the end of measurable snowfall to prevent snowmelt drainage onto the pavement.

Note 2: Notwithstanding the above, extended periods of extreme cold will be taken into consideration with respect to response times.

The contractor will prepare and implement a plan to keep shoulders clear on a more regular basis in areas of frequent pedestrian use (based on consultation with school districts, ~~related~~ stakeholders and local communities).

of primary

d) Miscellaneous

The Contractor will plow Overpasses and interchanges so as not to throw snow onto underlying Highways or railways.

The Contractor will keep Rest Areas, pull-outs, parking areas, Weigh Scales, and other areas designated by the Province open with the same priority as a Highway with the next lower class from adjacent Highway, e.g.: adjacent highway is class "B"; maintain rest area as class "C". Designated "Chain-up" areas will be maintained to the same priority as the adjacent highway.

The Contractor will remove loose snow and ice from footpaths, walkways, bicycle paths and commonly used pedestrian accesses on Rights-Of-Way within 2 days after the Traveled Lanes have been cleared on that Highway.

C. NON-COMPLIANCE:

The Contractor shall be in Non-Compliance when the End Result Specifications have not been achieved. Without limiting the generality of the foregoing, the Contractor will be in Non-Compliance when:

1. The Contractor has failed to maintain an accepted work procedure in the Quality Plan.
2. The Contractor has failed to develop and put into place a Winter Operational Plan that meets the End Result Specifications.
3. The Contractor has failed to deploy the necessary resources in accordance with the Operational Plan resulting in failure to meet performance specifications.
4. Conditions requiring corrective action exist and have not been observed and documented by the Contractor.
5. Conditions requiring corrective action exist, have been observed and documented by the Contractor but services were not performed effectively and/or within the response times outlined in section B.

Maintenance Specifications Issues

Updated: Fall 2009

Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation
Introduction	B/B1	Materials		Either Section B or Section B1 is referenced in the majority of the specifications: if the reference is to section B, it means the contractor must use materials only from the Standard Specs for Highway Construction (SSHC); if the reference is to B1, it means the contractor must use materials and procedures from the SSHC.	This is not commonly understood; the distinction between B and B1 is too subtle; and, there is no 'procedures' section in the Standard Specs for Highway Construction, therefore it is unclear what the contractor must follow; and, finally, sometimes there is no guidance in the SSHC, e.g., Steel Iron (section 911 was in 2000 version, not in the 2004 version) or it is not easily applicable (e.g., end product spec for paving). It may be best to specify for each specification what is required, even if it means duplicating what is in the SSHC.
Introduction	F	Road Inventory Management System		Still refers to RIMS;	should reference CHRIS;
Introduction	F	Road Inventory Management System		Often issues around whether the contractor should be compensated because the inventory was not accurate at the time of the RFP, or because we have added inventory	Should we reinforce the language in this section?
Introduction	F	Road Inventory Management System		If the decision is made to transfer the responsibility of updating inventory to the contractors, this may have to be reflected in this section	for consideration
Introduction	H	Emergency Maintenance Services		The attempt to cap the contractors' risk by introducting the overall 2% cap should be reviewed. It has not been triggered (as of 2009); the language (relationship between 2 events of $25K and remaining events of $5K) is complicated and misunderstood; as a result, there is a risk that it may not be implemented consistently;	Some information on the type, number and value of emergency events is being collected; it should be reviewed with a view to simplifying the language;
Introduction	H	Emergency Maintenance Services	4	Introduced the possibility of using quantified credits for emergency events - the intent was that it would be applied only in exceptional circumstances;	May want to re-consider this addition and/or clarify when it will be applied
Introduction	H	Emergency Maintenance Services		if, during an emergency, the contractor has to increase their patrol frequencies, do those costs form part of the 'emergency' or is that considered routine patrol?	for consideration
Introduction	I	Damage to Government Property		Language in the section I of the Intro to the specs (all damage to gov't property is Routine) contradicts language in section 9.11 and 9.12 of the contract (damage to gov't property may be Emergency or Additional work); it also is confusing in light of the Admin Bulletin #1 (contractors may claim quanitified credits for unrecovered claims for DGP)	Ensure the language is consistent

Maintenance Specifications Issues

Updated: Fall 2009

Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation
Introduction	I	Damage to Government Property		Contractors submit claims using Direct Plus Rates; ICBC does not agree with the markups;	Need to be clear how the contractors should submit/what they should expect as recoveries; should consult with ICBC when drafting the language
Introduction	J	Referenced Manuals		Unclear whether the manuals form part of the requirements, or are to used as reference material only; e.g., are the requirements stated in the Snow Avalanche Sefety Measures mandatory?, are the environmental best practices mandatory? The Traffic Control Manual for Work on Roadways is - but that is specified in 5-470.	Should be clear about whether all the requirements in the manuals form mandatory requirements
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		We get many complaints, especially from motorcyclists regarding slippery conditions as a result of crack sealing	Is there a need to change the spec? Is the problem related to overfilling, the type of product used, the blinding sand used?
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		Should we make a distinction between end-product expected for routine patches, vs permanent patches?	for consideration
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		should we change the unit of measure from m2 to tonnes?	for consideration
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		are grader patches acceptable? Only on certain types of roads?	for consideration
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		inconsistent approach wrt patching and whether Standard Specs for Hwy const. Apply; some argue that we should state that only larger patches should be made to comply with SSHC; if only larger, what size/tonnage?	for consideration
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		there is no response timeframe for 'moderate' potholes (high severity is id in 3.1.1 and low severity is id in 3.2.1)	need response timeframe for 'moderate' potholes
1 - Surface Maintenance	1-110	Highway Surface Treatment	2.2	change to 'All services for this maintenance specification are Quantified'	fix (formating consistency)
1 - Surface Maintenance	1-110 vs 1-140	Highway Surface Treatment v. Dust Control and Base Stabilization		Under Surface Treatment, the contractor is provided additional credits for grading the road whereas for base stabilization, the contractor gets no additional credits for grading the road	Should we be consistent?
1 - Surface Maintenance	1-130	Gravel Surface Grading and Re-Shaping		major change this round was to make grading all quantified	Should we leave grading all quantified?
1 - Surface Maintenance	1-130	Gravel Surface Grading and Re-Shaping		if stays all quantified, change to: all services for this maintenance specification are Quantified	fix (formating consistency)

Maintenance Specifications Issues

Updated: Fall 2009

Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation
1 - Surface Maintenance	1-130	Gravel Surface Grading and Re-Shaping		There are disputes around grading vs. Reshape	instead of getting a price for surface grading and one for grade surface reshape, consider one price for grading without water, and one price for grading with water?
1- Surface Maintenance	1-140	Dust Control and Base Stabilization		Some concerns that 3m is not wide enough	3m is not wide enough - do we want to change; need to consider cost implication; this would increase the cost
1- Surface Maintenance	1-150	Highway Surface and Shoulder Gravelling	2.2	All services for this maintenance specification are Quantified'	fix (formating consistency)
1- Surface Maintenance	1-150	Highway Surface and Shoulder Gravelling	3.2.d)	we give credit for gravelling when repairing deficiencies more than 100m, but not for grading; we are silent on gravelling when repairing deficiencies under 100 m; did we intend that to be routine; if yes, we should say so;	for consideration
1 - Surface Maintenance	1-160	Highway Shoulder Maintenance	2.2	All services for this maintenance specification are Quantified'	fix (formating consistency)
1 - Surface Maintenance	1-160	Highway Shoulder Maintenance	3.2.1	The sentence 'Not applicable to this Maintenance Specification' appears in error;	Delete; there are performance time frames for this quantified activity
1 - Surface Maintenance	1-160	Highway Shoulder Maintenance	3.2.e)	we give credit for grading when repairing deficiencies less than 100m, but not for gravelling; we are silent on grading credits when repairing deficiencies under 100m; did we intend that to be routine; if yes, we should say so;	for consideration
1 - Surface Maintenance	1-170	Road Base Maintenance	2.2	All services for this maintenance specification are Quantified'	fix (formating consistency)
1 - Surface Maintenance	1-180	Pavement Surface Cleaning	2.2	All services for this maintenance specification are Routine'	fix (formating consistency)
1 - Surface Maintenance	1-180	Pavement Surface Cleaning		we get a lot of complaints about sweeping, especially from cyclists;	for consideration; there are cost implications of increasing the LOS; or should there be a LAS in selected areas;
1 - Surface Maintenance	1-190	Debris Removal	2.1	All services for this Maintenance Specification are Routine'	fix (formating consistency)
1 - Surface Maintenance	1-200	Highway Structures Maintenance		There is no mention of cattleguard replacements	Consider whether to have replacement as a quantified item; if we add it, there will be a need for a new item in Schedule 5
1 - Surface Maintenance	1-200	Highway Structures Maintenance		There is no longer a reference to expectations during winter; there used to be; should we include?	for consideration
1 - Surface Maintenance	1-200	Highway Structure Maintenance	3.1.f)	refers to 'written instruction' which doesn't exist in most cases; where there are written instructions, they are Local area specs.	Consider whether we remove all references to arrestor bed maintenance in 1-200 and make it a LAS only when applicable in a SA;
1 - Surface Maintenance	1-220	Curb, Island & Barrier Maintenance	3.2.1.a)	"Repair curb" should read "construct curb"	typo

Maintenance Specifications Issues

Updated: Fall 2009

Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation
1 - Surface Maintenance	1-220	Curb, Island & Barrier Maintenance	2.2	Confusion with reflector maintenance and replacement. 5-440 describes reflector maintenance and replacement as routine 1-220 states that reflector maintenance/repair is routine while reflector replacement is quantified.	Reflector maintenance/repair/replacement was intended to all be routine. The intent was to provide credit from 'specialty type' reflectors, eg., solar powered, etc.; however, we neglected to add an item in Schedule 5; need to be clearer.
1 - Surface Maintenance	1-220	Curb, Island & Barrier Maintenance	3.1.1.d	refers to 'rails'	Include term "guardrail" rather than just "rail" (typo)
1 - Surface Maintenance	1-220	Curb, Island & Barrier Maintenance	3.1.a)	Not clear if we expect bullnoses to be painted?	for consideration
1 - Surface Maintenance	1-220	Curb, Island & Barrier Maintenance		no references to the new barriers (post and tension rope); they need to be reset after impact	May need a new item in Schedule 5 and references to maintenance requirements in the spec
1 - Surface Maintenance	1-250	Ditch and Watercourse Maintenance		we agreed as part of Climate Action initiatives, to allow the contractor to leave material in situ in certain circumstances; should this be reflected in the spec?	for consideration
	1-230	Railway Crossing Maintenance	2.1	All services for this Maintenance Specification are Routine'	fix (formating consistency)
2 - Drainage Maintenance	2-260	Drainage Appliance Maintenance		we are silent on whether we provide credit for patching as part of the culvert installation (where existing surface is paved)	We need to specify;
2 - Drainage Maintenance	2-270	Shore, Bank and Watercourse Maitnenance		should specify that if permits from MELP and or DFO are required, they will be obtained by the contractor, at their own cost; these are not covered by the agreement we have with MoE re: section 9 approvals;	for consideration
2 - Drainage Maintenance	2-280	Enginered Wetland and Water quality Pond Maintenance		this spec reads like it applies to drainage appliances; also, given the stringent requirements by DFO, the cost of maintaining is not insignificant; should be revised; perhaps we should consider making it a quantified item;	for consideration
3 - Winter Maintenance	3-310	Winter Abrasives	3.1 b), 3.1.1	3.1 b) states contractor must respond immediately if unsafe conditions are detected or reported; response time table does not say that;	include in response time table
	3-310	Winter Abrasives	3.1.a)i)	states/implies that the contractor must apply abrasives or chemicals in advance of all events	the intent of the language was to get contractors to start the process before the event actually started - whenever practicable; for consideration - perhaps the intent could be more clearly described

Maintenance Specifications Issues

Updated: Fall 2009

Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.a)ii)	states that the contractor must use RWIS; contradicts section 1.04 of Schedule 20 (not obliged to use info from RWIS); note that not all SA's have RWIS stations;	eliminate contradiction
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control	3.1 3.1.p)	- No reference to compact snow removal - abrasive should be a requirement for structures under 5% grade.	for consideration
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control	3.1.d)	refers to clearing snow accumulations against Median barriers; what about roadside barriers?	for consideration
3 - Winter Maintenance	3-340	Highway Condition Reporting	3.1.b)	states that the contractor reports fatalities and other major accidents to the DMT; actual practice is to contact PHCC;	for consideration; do we need to include both PHCC and district?
3 - Winter Maintenance	3-340	Highway Condition Reporting	3.1.1	reporting times of 5:00, 9:00 and 1:00 in winter - should we revise?	for consideration; should we ask for report around 4:00? Is the 1:00 report useful?
3 - Winter Maintenance	3-340	Highway Condition Reporting	3.1.1	Does not address immediate notification of closures.	include in response time table/section
3 - Winter Maintenance	3-340	Highway Condition Reporting		especially when we first implemented Drive BC, there were inconsistencies in how we described expectation;	review latest Drive BC processes and ensure there are no inconsistencies and/or omissions in spec
	3-340	Highway Condition Reporting		if the conditions remain stable for an extended period of time, Drive BC shows no change; there is no 'evidence' that the contractor is checking that the conditions in Drive BC accurately describe road conditions;	for consideration - do we need to change Drive BC to allow the contractor to 'confirm' conditions at the appropriate response times? Or do we require the contractor to keep documentation to provide that evidence?
4 - Winter Maintenance	3-300	Snow removal	3.1.h)	no reference to break checks - to be maintained at the same level as the adjacent highway.	include
4 - Roadside Maintenance	4-350	Roadside Vegetation Control	3.2.h)	- Concern with mowing that only the max height is set. - Would like it changed to the height at which they have to start mowing.	for consideration
4 - Roadside Maintenance	4-350	Roadside Vegetation Control	3.2.a)iv)	refers to removing vegetation that constitutes noxious weeds; we don't specifically state that the contractor is not to use herbicides; should we be specific?	for consideration
4 - Roadside Maintenance	4-350	Roadside Vegetation Control	3.2.k)	speaks to removing vegetation within 5 m perimeter but does not indicate maximum height;	for consideration
4 - Roadside Maintenance	4-350	Roadside Vegetation Control		Gradall machine & mower attachments create a real mess. No specific requirement to dispose and remove these cuttings. Not just esthetics but could be a fire hazard.	for consideration
4 - Roadside Maintenance	4-370	Litter Collection & Graffiti Removal	3.1.1.a)	in response time table, does mention of Hwy 1 and other Lower Mainland hwys, conflict with reference to highways with traffic volumes over 50,000/day?	for consideration

Maintenance Specifications Issues

Updated: Fall 2009

Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation
	4-370	Litter Collection & Graffiti Removal	2.1	All services for this Maintenance Specification are Routine'	fix (formating consistency)
4 - Roadside Maintenance	4-370	Litter Collection & Graffiti Removal	2.1.a)	Remove "graffiti"; graffiti is covered in 2.1.c)	remove and review 2.1.c)
4 - Roadside Maintenance	4-370	Litter Collection & Graffiti Removal	2.1.d)	policy for dealing with abandonned vehicle has been revised	review section and latest policy to ensure consistency
	4-380	Rest Area and Roadside Facility Maintenance	2.1	All services for this Maintenance Specification are Routine'	fix (formating consistency)
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance		unclear who is responsible for payment of electrical, sewage pump, water payments etc. at rest areas.	Review language in spec to ensure it reflects: 1. Rest Area Electrical directly connected to luminaire poles in local vicinity - Ministry responsible for payment through BC Hydro 2. Rest Area facility metered separately from overall Hydro agreement with Ministry - Contractor responsible for payment 3. Water Usage Issue: Contractor responsible for payment where water usage is metered separately.
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance	3.1.1	it has been suggested that the response times should be coordinated with the patrol times, i.e., ensure that 2 activities can be performed by same individual; may be more cost effective;	for consideration
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance		Patching/landscaping/mowing beyond normal R/W mowing	These are not included specifically in the specs but are a "quantified" work item within the contract and can be undertaken if MC/District agree.
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.1.1.a)	numbering is out in the table; goes from iv) to vii)	fix (typo)
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.1.1 - Response Times	Are subsections for response times for scheduling of routine maintenance services interpreted sequentially or independently? - Contractor will not replace reflectors during mild winter. - If b) and c) are treated independently, the contractor is obligated to replace. - application of b) and c) response times year round met with limited success.	Intent: Section a) interpreted separately from section b) and c). Contractor responsible to do work if missing reflectors impact safety.
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.1 and 3.1.1c)	response time for re-painting posts, but no reference in 3.1 that it is a responsibility; if add to 3.1, should specify that treated posts do not have to be painted	specify
5 - Traffic Maintenance	5-440	Sign System Maintenance		we have been accepting sign posts without a concrete base; it is not clear in the spec whether this is acceptable; do the Standard Specs for Hwy Const address this?	for consideration

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.1.e)	when contractor seeks approval for re-ordering and design of guide signs and special information signs, they obtain the detail and specifications required to get the sign manufactured; perhaps we should specify that;	for consideration
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.2.1	seems to imply that all sign installations/re-installations must be approved by the Province; do we need to clarify?	for consideration
5 - Traffic Maintenance	5-440	Sign System Maintenance		unclear whether replacement of posts in routine; there is no item and price in Scheule 5	if it's decided that this should be quantified, consider adding price for post only (in Schedule 5), although there may be a need for different types of posts (telspar, wood)
5 - Traffic Maintenance	5-440	Sign System Maintenance		there is inconsistency in how multiple sign faces on one post are credited; e.g., 2 G07s on one post is less than 1m2; is it one credit or 2? Do we need to specify?	for consideration
5 - Traffic Maintenance	5-450	Temporary Line Marking and Eradiction	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)
5 - Traffic Maintenance	5-470	Highway Traffic Control		numbering is missing/inconsistent with other specs	fix (typo)
5 - Traffic Maintenance	5-470	Highway Traffic Control	2.1.c	Perform initial traffic control - what does "initial" mean?	consider taking the word 'initial' out; develop in conjunction with 7-780
	5-470	Highway Traffic Control	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)
5 - Traffic Maintenance	5-470	Highway Traffic Control	3.1.g)	- Does not make sense: Obtain the prior written approval of the Province temporary traffic control signals.	fix (typo) - should read: Obtain the written approval of the Province to use temporary traffic control signals.
6 - Structure Maintenance		wheelguards		is the replacement of wheelguards routine?	for consideration
6 - Structure Maintenance	6-500	Bridge Deck Maintenance		Concrete patch strength chart was removed from specification and is not available anywhere else (i.e. standard specs)	consider including
6 - Structure Maintenance	6-500	Bridge Deck Maintenance	3.3 b) iii)	issue regarding 'treated' lumber and what is acceptable (see file on issue)	for consideration
	6-510	Bridge and Structure Cleaning	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)
6 - Structure Maintenance	6-510	Bridge and Structure Cleaning	3.1.1.b)	not clear what this says - are requirements under b) in addition to a)?	consider specifying; and/or taking out 3.1.1b)iv)
6 - Structure Maintenance	6-510	Bridge and Structure Cleaning		we have an agreement with MoE that section 9 permits will be issues free of charge; contractors apply on behalf of the ministry; should we specify that in the spec?	for consideration
	6-520	Bridge Drain and Flume Maintenance	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation
	6-560	Bailey and Acrow Bridge Maintenance	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)
	6-570	Minor Painting of Bridge Structures	2.2	change to read: all services for this maintenance specifcation are Quantified	fix (formating consistency)
6 - Structure Maintenance	6-570	Minor Painting of Bridge Structures		Round IV defined what timber rail painting included and how it was to be measured as..."timber rail painting will be determined by a single horizontal unit measure of railing, where a unit measure of railing consists of the entire design structure of the railing, including rails, posts and/or wheelguards.".This has been removed from the specs and now the contractor wants to get paid for metres of rail systems AND for metres of wheelguards, whereas n the past, it has always been rail sysems including wheelguards.	for consideration
	6-600	Concrete Structure Maintenance	2.2	change to read: all services for this maintenance specifcation are Quantified	fix (formating consistency)
	6-605	Steel and Aluminum Structure Maintenance	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)
6 - Structure Maintenance	6-620	Timber Truss Bridge Maintenance		there is no reference to inspection of truss rods; should we add to routine? Or quantified? If quantified, do we want a separate price (should be less costly than drop and replace)	for consideration
6 - Structure Maintenance	6-640	Bridge Piling Maintenance	3.2 Note 2	not clear whether the $35,000 cap applies to a singular Pile or to Piles	for consideration
6 - Structure Maintenance	6-660	Retaining Structure Maintenance	3.1.1.c)	missing word 'response'	fix (typo) should read, ...deficiencies within the response time, from the time....
	6-680	Multiplate Structure Maintenance	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)
	6-690	Bridge Railing Maintenance	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)
6 - Structure Maintenance	6-690	Bridge Railing Maintenance	3.3b)ii)	states that material for Wheelguards must be untreated; in practice we allow untreated; if untreated, do we want them painted?	for consideration
6- Structures		all		clarify the responsibilities of the MC with respect to a) submitting repair proposal details for approval when req'd; and b) supplying engineering services as needed to accomplish repairs, e.g., substituting components when replacement of original components is not feasible; and clarify who pays	for consideration

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation
7 - Emergency Maintenance	7-760	Flood Control and Washout Response	3.1.1.c)	provides credit for placement of rip-rap; this in inconsistent with 2.1 which states that all work is routine; also leads to inconsistencies in applicationand confusion when read in conjunction with the Intro (financial caps)	need to clarify; need to consider along with changes to ssection H of the Introduction
7 - Emergency Maintenance	7-760	Flood Control and Washout Response	3.1.1.b)	currently reads 'immediately establish at least one through lane...'	consider changing to: 'immediately restore at least one through lane'
7 - Emergency Maintenance	7-790	Snow Avalanche Response		why is this included in all contracts; shouldn't it be a LAS where applicable?	for consideration
7 - Emergency Maintenance	7-790	Snow Avalanche Response		numbering is inconsistent; General Perf spec, s. 2 Routine should say 2.1; Quantified should be 2.2; Detailed Perf spsec, s.3 Routine should be 3.1;	fix (typo)
	7-790	Snow Avalanche Response	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)
7 - Emergency Maintenance	7-790	Snow Avalanche Response	3.1.e)	should the requirement for clearing snow off gun platforms be removed, given the new approach to helicopter control in some areas, e.g., Coquihalla	consider in conjunction with recommendation to move to LAS - differences such as these could be better reflected;
	7-810	Bailey and Acrow Emergency Installation	2.2	change to read: all services for this maintenance specifcation are Quantified	fix (formating consistency)
7 - Emergency Maintenance	7-810	Bailey and Acrow Emergency Installation		This is listed as a quantified activity, yet there is no item or price in Schedule 5; in practice all this is paid as additional except the for stockpiling of the components;	for review;
8 - Inspection		Chapter name		Inspection and patrol are separate and distinct activities; why is does the chapter title only refer to inspection; why not inspection and patrol	for consideration
8 - Inspection	8-840	Highway Patrol	3.1.1.a.ii.	defines patrol response times as: at all times, and wnter patrols (during snowfall); what about when freezing conditions are present, or when a storm is forecast? Should we expand to include those conditons?	for consideration
8 - Inspection	8-840	Highway Patrol	3.1.1.a.ii.	it has been suggested that an addiitional frequency be added for 'considerable avalanche hazard' - 1 hr on Class A, 2 hrs on Class B, 4 hrs on Class C, 6 hrs on Class D and 9 hrs on Class E;	for consideration
8 - Inspection	8-840	Highway Patrol	3.1.1a)ii)	is patrol frequency on Class E highways realistic; it is quite high, considering that these are defined as 'irregularly' maintained roads	for consideration

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation
8 - Inspection	8-840	Highway Patrol		is there an opportunity to reduce patrol cycles to reduce greenhouse gas emissions, e.g., rely on cameras, weather stations, etc. to monitor conditions	for consideration
8 - Inspection	8-850	Highway Inspection		if we don't expect the contractor to inspect every inventory item, and to record the results of such inspections, but that is what the spec says; we should specify what we do expect	for consideration
9 - Definitions				Ensure all defined terms are capitalized and that all capitalized terms are defined	
9 - Definitions		Danger Tree		is there a need to fine-tune?	for consideration
9 - Definitions		Emergency Site		is there a need to fine-tune?	for consideration
9 - Definitions		Drainage appliance		it has been suggested that Drainag appliance needs to be defined; the following definition has been suggested: undergroud drainage facility including manholes, catch basins, inlets and outfalls, drain pipes, french drains and perforated drains, flumes, culverts less than 3 metres, box culverts	for consideration
10 - Quantified Maintenance Services				Inconsistent application/interpretation of term "isolated areas"? - Isolated areas were intended only where there is a requirement to move equipment and materials by barge/ferry; not 'isolated' areas of work	clarify and/or change term to 'outer islands' which is a term already used for some activities
New specs		Sign bridges		none currently; should we have one to clearly outline responsibilities, or can it be included in an existing spec?	for consideration
New specs		Ungulate guards		none currently; should we have one to clearly outline responsibilities, or can it be included in an existing spec, or should it be a LAS?	for consideration
New specs		Weigh scales		only responsibilities are litter pickup and snow removal; MC not responsible for washrooms;	for consideration; or ensure responsibilities clear in rest area/facilities;snow removal and litter specs;
New specs		Reporting requirements		none currently, should we have one to clearly outline responsibilities?	for consideration
New specs		Stakeholder relations		none currently, should we have one to clearly outline responsibilities?	for consideration
New specs		Salt shed maintenance		none currently; should we have one to clearly outline responsibilities?	for consideration
General					compare specs to specs used for concessions and to Ontario - are there models of specs that are closer to end-product
General					ensure consistency in how we describe General performance spec and Detailed performance spec
General					can we better describe expectation for winter

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation
General					can we better describe expectations for summer routine

		Rout./Quant.	Credit for:	No credit for:
1-110	**Highway Pavement Patching and Crack Sealing**	**Routine**	silent	silent
		Quantified	silent	silent
1-110	**Highway Surface Treatment**	**Quantified**	Road Base Maintenance, Pavement Patching and Cracksealing, Gravel Surface Grading and Re-shaping, Surface and Shoulder Gravelling	silent
1-130	**Gravel Surface Grading and Re-shaping**	**Quantified**	silent	silent
1-140	**Dust Control and Base Stabilization**	**Routine**	silent	silent
		Quantified	silent	Reshaping
1-150	**Highway Surface and Shoulder Gravelling**	**Quantified**	Road Base Maintenance	Grading
1-160	**Highway Shoulder Maintenance**	**Quantified**	Road Base Maintenance, Grading, Patching, Gravelling	Surface Cleaning
1-170	**Road Base Maintenance**	**Quantified**	Patching and Cracksealing, Surface Treatment, Concrete Bridge Deck Maintenance, Drainage Applicance Maintenance	Dust Control
1-180	**Pavement Surface Cleaning**	**Routine**	silent	cleaning around barriers
1-190	**Debris Removal**	**Routine**	silent	silent
1-200	**Highway Structures Maintenance**	**Routine**	pavement patching, concrete patching	multiplates
1-220	**Curb, Island and Barrier Maintenance**	**Routine**	silent	silent
		Quantified	silent	concrete barrier reflectors
1-230	**Railway Crossing Maintenance**	**Routine**	silent	patching or gravelling
2-250	**Ditch and Watercourse Maintenance**	**Routine**	silent	silent
		Quantified	resetting/replacing drainage appliances	removing snow and ice
2-260	**Drainage Appliance Maintenance**	**Routine**	silent	silent
		Quantified	replacing damaged curbs, spillways, flumes, placing Rip-Rap (but not patching??)	silent
2-270	**Shore, Bank and Watercourse Maintenance**	**Routine**	silent	silent
		Quantified		
2-280	**Engineered Wetland and Water Quality Pond Maintenance**	**Routine**	silent	silent
		Quantified	replacing appliances, placing Rip-Rap	silent
3-300	**Highway Snow Removal**	**Routine**	silent	silent
3-310	**Winter Abrasive and Chemical Snow and Ice Control**	**Routine**	silent	silent
3-320	**Roadside Snow and Ice control**	**Routine**	silent	silent
3-340	**Highway Condition Reporting**	**Routine**	silent	silent
4-350	**Roadside Vegetation Control**	**Quantified**	removing vegetation under Ditch and Watercourse Maintenance	silent
4-370	**Litter Collection and Graffiti Removal**	**Routine**	silent	silent
4-380	**Rest Area and Roadside Facility Maintenance**	**Routine**	Roadside Vegetation control under Vegetation control	silent
4-400	**Roadside Fence Maitenance**	**Routine**	silent	silent
		Quantified	silent	silent
5-440	**Sign System Maintenance**	**Routine**	silent	silent
		Quantified	silent	silent
5-450	**Temporary Line Marking and Eradication**	**Routine**	silent	silent
5-470	**Highway Traffic Control**	**Routine**	silent	silent
6-500	**Bridge Deck Maintenance**	**Routine**	silent	silent
		Quantified	repair wearing surface under patching (but not concrete deck maint?)	bridge railings/posts if done as timber redecking
6-510	**Bridge and Structure Cleaning**	**Routine**	silent	silent
6-520	**Bridge Drain and Flume Maintenance**	**Routine**	silent	silent
6-530	**Bridge Joint Maintenance**	**Routine**	silent	silent
		Quantified	silent	silent
6-540	**Bridge Bearing Maintenance**	**Routine**	silent	silent
		Quantified	silent	silent
6-560	**Bailey and Acrow Bridge Maintenance**	**Routine**	silent	silent
6-570	**Minor Painting of Bridge Structures**	**Quantified**	silent	silent
6-600	**Concrete Structure Maintenance**	**Quantified**	cracksealing under concrete deck maint (but not pavement crack sealing?)	silent
6-605	**Steel and Aluminum Structure Maintenance**	**Routine**	silent	silent
6-620	**Timber Truss Bridge Maintenance**	**Routine**	silent	silent
		Quantified	silent	silent
6-640	**Bridge Piling Maintenance**	**Routine**	silent	silent
		Quantified	silent	silent
6-650	**Timber and Log Structure Maintenance**	**Routine**	silent	silent
		Quantified	silent	silent
6-660	**Retaining Structure Maintenance**	**Routine**	silent	repairing timber and log components
		Quantified	replacing concrete components under Concrete Structure Maint, replacing timber/log components under Bridge Piling Maint	silent
6-680	**Multiplate Structure Maintenance**	**Routine**	replacing scoured/eroded foundation material under Ditch and Watercourse Maintenance, repairing asphalt under Patching, repairing concrete under Concrete Structure Maint	silent
6-690	**Bridge Railing Maintenance**	**Routine**	concrete repair; minor painting	silent
6-740	**Debris Torrent Structure Maintenance**	**Routine**	patching and Cracksealing, Concrete Structure Maintenance, Bridge Deck Maintenance	silent
7-760	**Flood Control and Washout Response**	**Routine**		no credit for rip-rap, unless mutually agreed to; no credit for other repairs
7-770	**Mud, Earth and Rock Slide Response**	**Routine**	silent	no credit for any repairs

7-780	**Highway Incident and Vandalism Response**	**Routine**	credit under the applicable spec when repairing any damage to Highways caused by incidents or vandalism (if cost is not recevered under CMC); and, we have allowed credits if claim is denied (see Admin bulletin #1)	silent
7-790	**Snow Avalanche Response**	**Routine**	silent	silent
7-800	**Structural Damage Response**	**Routine**	silent	Bridge railing maintenance
7-810	**Bailey and Acrow Emergency Installation**	**Routine**	silent	silent
8-830	**Highway Inspection**	**Routine**	silent	silent
8-840	**Highway Patrol**	**Routine**	silent	silent
8-850	**Bridge Inspection**	**Routine**	silent	silent

Issue	Comments/Recommendations
canvass each SA to review existing LAS	
canvass each SA to see if new LAS required	
small airport maintenance spec - typos	address typos/consistency in formatting
small airport maintenance spec - typos	
SA20 landscaping	forgot to include in 03/04; district dealing with omission informally;
landscaping	there are water meters in some areas - water costs are currently included in the PS - should be clearer next time where they are, what costs are
1-180 - surface cleaning	Lower Mainland and other areas have a requirement for additional sweeping; should we incl. LAS, or amend 1-180?
consider a LAS in SA16 for 24 hr patrol when rain is forecast or freeze/thaw conditions are present	
need a LAS for treatment of knotweed and giant hogweed	Crystal to provide SA's that will require (based on discussions at mtg November 2010)

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
General				With end-product specs, it is difficult when there is quick staff turnover and with non-technical staff taking on AM positions - how can they judge if the end-product is achieved?	for consideration	This is a staff Training Program issue for existing and potential Area Managers. It is not a Specification issue.	Discussed and agreed to Decision.
Introduction	A	Services		May need special term, or category of services if we decide to capitalize some services	for consideration; may impact the contract language	Not recommended at this time.	Potential B item
Introduction	B/B1	Materials		Either Section B or Section B1 is referenced in the majority of the specifications: if the reference is to section B, it means the contractor must use materials only from the Standard Specs for Highway Construction (SSHC); if the reference is to B1, it means the contractor must use materials and procedures from the SSHC.	This is not commonly understood; the distinction between B and B1 is too subtle; and, there is no 'procedures' section in the Standard Specs for Highway Construction, therefore it is unclear what the contractor must follow; and, finally, sometimes there is no guidance in the SSHC, e.g., Steel Iron (section 911 was in 2000 version, not in the 2004 version) or it is not easily applicable (e.g., end product spec for paving). It may be best to specify for each specification what is required, even if it means duplicating what is in the SSHC.	Removed from Introduction and now included within revised format for Specifications.	Completed.
	B/B1	Materials			If the decision is to be more specific, the following sections apply to the environmental requirements: 165, 751, 754, 757, 766, 769; we would have to determine which specs specifically they apply to…		
Introduction	F	Road Inventory Management System		Still refers to RIMS;	should reference CHRIS;	Remove reference to RIMS and CHRIS within revised Specification. Has little purpose for being referenced.	Completed.
Introduction	F	Road Inventory Management System		Often issues around whether the contractor should be compensated because the inventory was not accurate at the time of the RFP, or because we have added inventory	Should we reinforce the language in this section?	Possible B item for future RFP's but current contract language addresses changes in inventory during the Term.	Potential B item.
Introduction	F	Road Inventory Management System		If the decision is made to transfer the responsibility of updating inventory to the contractors, this may have to be reflected in this section	for consideration	This is a contract language item for future consideration. Specification Introduction no longer references inventory systems.	Potential B item.
Introduction	H	Emergency Maintenance Services		The attempt to cap the contractors' risk by introducing the overall 2% cap should be reviewed. It has not been triggered (as of 2009); the language (relationship between 2 events of $25K and remaining events of $5K) is complicated and misunderstood; as a result, there is a risk that it may not be implemented consistently;	Some information on the type, number and value of emergency events is being collected; it should be reviewed with a view to simplifying the language;	Cannot make changes at this time but has been reviewed by others for future contracts.	Potential B item.
Introduction	H	Emergency Maintenance Services	4	Introduced the possibility of using quantified credits for emergency events - the intent was that it would be applied only in exceptional circumstances;	May want to re-consider this addition and/or clarify when it will be applied	Quantified credits are currently applicable under 7-760, 7-770 and 7-780 but are not included under the caps. See Notes 3 language which is a repeated from the Introduction.	Potential B item if this decision needs revisiting.
Introduction	H	Emergency Maintenance Services		if, during an emergency, the contractor has to increase their patrol frequencies, do those costs form part of the 'emergency' or is that considered routine patrol?	for consideration	Current Specifications 8-840 (3.1.1.1 d)) can be interpreted to cover an increase in patrols as Routine but may want to reconsider current language to include as an added cost item in future.	Potential B item.
Introduction	I and 7-780	Damage to Government Property		the introduction to the specs, section I DGP, states that all damages to Government Property will be repaired as Routine regardless of whether the costs to repair those damages are recoverable or whether the Province reimburses the contractor for any costs recovered... However, 7-780, s. 3.1b)viii) states that repairing damage caused by incidents or vandalism	should we revisit that decision? If not, the introduction should be amended to reflect that DGP is repaired as routine and/or quantified.	This issue needs to be revisited in conjunction with the use of quantified credits for emergency events and increase in patrols during an emergency. To change it now opens up a discussion on all these issues. A next round item.	Potential B item.
Introduction	I	Damage to Government Property		Contractors submit claims using Direct Plus Rates; ICBC does not agree with the markups;	Need to be clear how the contractors should submit/what they should expect as recoveries; should consult with ICBC when drafting the language	This is a process issue which needs to be resolved outside of the current revision of Specifications.	Potential B item but can be reviewed at any time to clarify between the parties.
Introduction	G	Additional Work		when very large events happen, there are concerns re value of work/markups that a contractor may get	should we cap value? The markups?	Not a Specification issue but should be pursued for contract language changes in the next round.	Potential B item for future contract language changes

Maintenance Specifications Issues

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
Introduction	H	Emergency Work		2% cap has never been reached; language around 25K and 5K caps is misunderstood and inconsistently applied	review and simplify the language;	Can not make changes at this time but should be reviewed during preparation for next round of contracts. Training could be looked at in the interim.	Potential B item combined with training needs analysis.
Introduction	H	Emergency Work		it's difficult to recover from PEP	explore possibility of revising/adding language that might simplify the process of recovery	This is another process/administrative matter that needs attention but is not a Specification issue.	Can be addressed at any time. Not a B item.
Introduction	J	Referenced Manuals		Unclear whether the manuals form part of the requirements, or are to used as reference material only; e.g., are the requirements stated in the Snow Avalanche Safety Measures mandatory?, The Traffic Control Manual for Work on Roadways is - but that is specified in 5-470.	Should be clear about whether all the requirements in the manuals form mandatory requirements	New wording in Introduction addresses this issue.	Completed.
Introduction	J	Referenced Manuals		Environmental Best Practices	is it mandatory or suggested only?	It is not mandatory; to do so would be cost prohibitive; they will continue to be 'guidelines' only; that does not alter the contractor's responsibility to comply with all laws and regulations	Completed as per Decision.
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		We get many complaints, especially from motorcyclists regarding slippery conditions as a result of crack sealing	Is there a need to change the spec? Is the problem related to overfilling, the type of product used, the blinding sand used?	This issue was researched and findings indicate that there is a need to review alternative products used by Oregon counterparts that may address the problem.	This item needs to be discussed with staff responsible for the Recognized Product List.
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		Should we make a distinction between end-product expected for routine patches, vs. permanent patches?	for consideration	Was reviewed and decision was NO. Routine patches are a temporary repair to address safety.	Completed.
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		should we change the unit of measure from m2 to tones?	for consideration	No, but may be considered in next round keeping in mind the added administrative responsibility regarding records management and weight measurement processes.	Possible B item but not recommended.
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		are grader patches acceptable? Only on certain types of roads?	for consideration	No longer an issue. Also, discussion and review showed this method is rarely if ever considered and requires know how that is now missing.	Completed.
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		inconsistent approach with patching and whether Standard Specs for Hwy const. Apply; some argue that we should state that only larger patches should be made to comply with SSHC; if only larger, what size/tonnage?	for consideration	Reviewed but decided to leave for now but bring forward as a B item for next round consideration. Proposed Training Program might assit in approach to assessment.	Potential B item.
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		If required, patching should include the re install of lane lines.	for consideration: identified during review sessions	Agreed to as a B item.	Potential B item.
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		Paved Shoulders drop repairs need a response time concurrent with other pavement deficiencies.	for consideration: identified during review sessions	Agreed to as a B item.	Potential B item.
1 - Surface Maintenance	1-100	Highway Pavement Patching and Crack Sealing		there is no response timeframe for 'moderate' potholes (high severity is id in 3.1.1 and low severity is id in 3.2.1)	need response timeframe for 'moderate' potholes	Addressed and changed to Moderate and High.	Completed.
1 - Surface Maintenance	1-110	Highway Surface Treatment	2.2	change to 'All services for this maintenance specification are Quantified'	fix (formatting consistency)	Addressed and new Sealcoating Specification developed.	Completed.
1 - Surface Maintenance	1-110 vs 1-140	Highway Surface Treatment v. Dust Control and Base Stabilization		Under Surface Treatment, the contractor is provided additional credits for grading the road whereas for base stabilization, the contractor gets no additional credits for grading the road	Should we be consistent?	Addressed and new Sealcoating Specification developed.	Completed.
1 - Surface Maintenance	1-130	Gravel Surface Grading and Re-Shaping		major change this round was to make grading all quantified	Should we leave grading all quantified?	Reviewed and agreed to leave all quantified.	Completed.
1 - Surface Maintenance	1-130	Gravel Surface Grading and Re-Shaping		if stays all quantified, change to: all services for this maintenance specification are Quantified	fix (formatting consistency)	Addressed with new format.	Completed.
1 - Surface Maintenance	1-130	Gravel Surface Grading and Re-Shaping		There are disputes around grading vs. Reshape	instead of getting a price for surface grading and one for grade surface reshape, consider one price for grading without water, and one price for grading with water?	Reviewed and agreed to leave all quantified with no pricing changes..	Completed.
1- Surface Maintenance	1-140	Dust Control and Base Stabilization		Some concerns that 3m is not wide enough	3m is not wide enough - do we want to change; need to consider cost implication; this would increase the cost	Should be increased to 3.5 and reflected in the Table, but leave as a B item.	Potential B item.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
1 - Surface Maintenance	1 -140	Dust Control and Base Stabilization		Do we need Warranty?	Raised during review sessions.	Leave for now but considered during next round.	Potential B item.
1 -Surface Maintenance	1- 140	Dust Control and Base Stabilization		Need to clarify location and application rates. Difficult to get agreement on how it is applied.	Raised during review sessions.	Leave for now but considered during next round.	Potential B item.
1 - Surface Maintenance	1-140	Dust Control and Base Stabilization		No additional credit for re-shaping req'd prior to base stabilization; however, that is difficult to monitor/track; proponents may not notice the distinction and omit the cost in their UP;	Should we consider allowing the separate credit? In either case, we need to be clearer to proponents;	To be considered in the next round but leave for now.	Potential B item.
1- Surface Maintenance	1-150	Highway Surface and Shoulder Gravelling	2.2	All services for this maintenance specification are Quantified'	fix (formatting consistency)	Addressed with new format.	Completed.
1 - Surface Maintenance	1-150	Highway Surface and Shoulder Gravelling		Removal of vegetation on shoulders	Raised during review sessions.	Leave for now but consider during next round.	Potential B item.
1- Surface Maintenance	1-150	Highway Surface and Shoulder Gravelling	3.2.d)	we give credit for gravelling when repairing deficiencies more than 100m, but not for grading; we are silent on gravelling when repairing deficiencies under 100 m; did we intend that to be routine; if yes, we should say so; may be unclear to bidders	for consideration; issue is similar to base stab and grading (above)	Reviewed but agreed to leave as is and treat it as ongoing repair for now and re consider in the next round.	Potential B item.
1 - Surface Maintenance	1-160	Highway Shoulder Maintenance	2.2	All services for this maintenance specification are Quantified'	fix (formatting consistency)	Addressed with new format.	Completed
1 - Surface Maintenance	1-160	Highway Shoulder Maintenance	3.2.1	The sentence 'Not applicable to this Maintenance Specification' appears in error;	Delete; there are performance time frames for this quantified activity	Addressed with new format.	Completed.
1 - Surface Maintenance	1-160	Highway Shoulder Maintenance	3.2.e)	we give credit for grading when repairing deficiencies less than 100m, but not for gravelling; we are silent on grading credits when repairing deficiencies under 100m; did we intend that to be routine; if yes, we should say so;	for consideration	Reviewed but agreed to leave as is and treat it as ongoing repair for now and re consider in the next round.	Potential B item.
1 - Surface Maintenance	1-170	Road Base Maintenance	2.2	All services for this maintenance specification are Quantified'	fix (formatting consistency)	Addressed with new format.	Completed.
1 - Surface Maintenance	1-180	Pavement Surface Cleaning	2.2	All services for this maintenance specification are Routine'	fix (formatting consistency)	Addressed with new format.	Completed.
1 - Surface Maintenance	1-180	Pavement Surface Cleaning	3.1.1 c)	We should set a date (say April 1) for completing surface cleaning?	Raised during review sessions.	Could be applied for certain southern contract areas but less so in the northern areas.	Potential B item.
1 - Surface Maintenance	1-180	Pavement Surface Cleaning	3.1.1 a)	Need to clarify what we mean by Urban Highways.	Raised during review sessions.	Clarification required but leave for now because of potential cost increase.	Potential B item.
1 - Surface Maintenance	1-180	Pavement Surface Cleaning		we get a lot of complaints about sweeping, especially from cyclists; Minister's correspondence contains references to us reviewing this spec;	for consideration; there are cost implications of increasing the LOS; or should there be a LAS in selected areas; or should we 'soften' language so as not to create expectations? Refer to survey of Lower Mainland municipalities on sweeping frequencies	Reviewed but agreed to leave as for now but should take into consideration surveys in LM and consider the option of LAS based on cycling population levels in certain areas.	Potential B item.
1 - Surface Maintenance	1-190	Debris Removal	2.1	All services for this Maintenance Specification are Routine'	fix (formatting consistency)	Addressed with new format.	Completed.
1 - Surface Maintenance	1-190	Debris Removal	3.1	Note re: debris over 10 cubic meters was intended for debris caused by slides; not if debris is a result of wind storm, e.g., fallen trees; however, at times, the cost of cleanup is excessive	consider including a cap on risk to contractors. E.g., if, at any time for one storm event, the costs to deal with Debris, exceeds $10,000, refer to section G of the Introduction (i.e., pay additional costs through Direct Plus rates)	Reviewed and agreed to include a Note indicating removal costs over $10,000 are covered under Additional Maintenance.	Completed.
1 - Surface Maintenance	1-200	Highway Structures Maintenance		There is no mention of cattleguard replacements	Consider whether to have replacement as a quantified item; if we add it, there will be a need for a new item in Schedule 5	Reviewed and proposal on cost sharing or limit cost to $5,000 was considered but not agreed to.	Potential B item.
1 - Surface Maintenance	1-200	Highway Structures Maintenance		There is no longer a reference to expectations during winter; there used to be; should we include?	for consideration	Reference now included under 3.1 d) regarding removal of snow, ice and slush.	Completed.

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1 - Surface Maintenance	1-200	Highway Structure Maintenance	3.1.f)	refers to 'written instruction' which doesn't exist in most cases; where there are written instructions, they are Local area specs.	Consider whether we remove all references to arrestor bed maintenance in 1-200 and make it a LAS only when applicable in a SA;	Addressed with new wording under 3.1 g).	Completed.
1 - Surface Maintenance	1-220	Curb, Island & Barrier Maintenance	3.2.1.a)	"Repair curb" should read "construct curb"	typo	Corrected.	Completed.
1 - Surface Maintenance	1-220	Curb, Island & Barrier Maintenance	2.2	Confusion with reflector maintenance and replacement. 5-440 describes reflector maintenance and replacement as routine 1-220 states that reflector maintenance/repair is routine while reflector replacement is quantified.	Reflector maintenance/repair/replacement was intended to all be routine. The intent was to provide credit from 'specialty type' reflectors, e.g.., solar powered, etc.; however, we neglected to add an item in Schedule 5; need to be clearer.	Addressed with wording indicating reflector replacement as being routine. Specialty type reflectors were considered and decision was to treat as a B item.	Potential B item.
1 - Surface Maintenance	1-220	Curb, Island & Barrier Maintenance	3.1.1.d	refers to 'rails'	Include term "guardrail" rather than just "rail" (typo)	Corrected.	Completed.
1 - Surface Maintenance	1-220	Curb, Island & Barrier Maintenance		many traffic islands have been 'enhanced' with interlocking brick, landscaping, etc.; sometimes there are cost sharing agreements with municipalities to maintain these;	should we try to make those agreements available to all proponents? Should we be clear whether there is additional compensation for those 'special' islands?	This is normally addressed locally with municipalities with agreement reached on the division of responsibility and cost. Information should be provided during contract renewal indicating but should not involve added cost.	Potential B item.
1 - Surface Maintenance	1-220	Curb, Island & Barrier Maintenance	3.1.a)	Not clear if we expect bullnoses to be painted?	for consideration	It was decided to include new wording in revised Spec. to read "repaint all painted surfaces" which might include existing bullnoses. However issue still needs resolving.	Potential B item.
1 - Surface Maintenance	1-220	Curb, Island & Barrier Maintenance		no references to the new barriers (post and tension rope); they need to be reset after impact	A new, separate spec has been created -consider incorporating into 220 or leaving as separate	Decision was to treat as a LAS.But in next round to include in existing Spec. or create new one.	Potential B item.
1 - Surface Maintenance	1-230	Railway Crossing Maintenance	2.1	All services for this Maintenance Specification are Routine. In next round review what if any items under 3.1 c) should be quantified.	fix (formating consistency). Should some of the routine items be quantified?	Addressed with new format. In next round review to determine what if any items should be quantified.	Completed format item but Specification has potential B item.
2 - Drainage Maintenance	2-250	Ditch and Watercourse Maintenance		we agreed as part of Climate Action initiatives, to allow the contractor to leave material in situ in certain circumstances; should this be reflected in the spec?	for consideration	Decision to include a Note under 3.2 allowing for disposal in situ based on appropriate approvals.	Completed.
2 - Drainage Maintenance	2-250	Ditch and Watercourse Maintenance		leaving material in situ creates issues with weeds; see Al Planiden's email	for consideration	Discussed but agreed to proceed as per above decision.	Completed.
2 - Drainage Maintenance	2-250	Ditch and Watercourse Maintenance		some have raised concerns about the amount of ditching being done (too much)	for consideration	Not a Specification issue. Requires Districts to undertake review of quantities.	Potential B item.
2 - Drainage Maintenance	2-260	Drainage Appliance Maintenance		we are silent on whether we provide credit for patching as part of the culvert installation (where existing surface is paved)	We need to specify;	Decision was include new wording allowing for credit in revised Spec.	Completed.
2 - Drainage Maintenance	2-260	Drainage Appliance Maintenance		Under quantified should consider the size of replacement appliance and cost. May want to cap and consider Additional Maintenance.	Raised during review sessions.	Agreed to consider in next round.	Potential B item.
2 - Drainage Maintenance	2-260	Drainage Appliance Maintenance		some proponents were confused about this section; perhaps it would be clearer to state that the maintenance of biofiltration systems is not included in this spec; and, include a LAS if there is a biofiltration system in an area	for consideration	Reviewed and agreed to include a Note under 3.2 indicating that any work is to be undertaken based on existing LAS.	Completed.
2 - Drainage Maintenance	2-260	Drainage Appliance Maintenance		catch basins, spillways not being maintained regularly; need regular maintenance of these;	for consideration	Not a Spec. issue but agreed to include added wording in revised Spec. regarding work identification and planning program to emphasize importance of regular	Completed.
2 - Drainage Maintenance	2-260	Drainage Appliance Maintenance		culvert inserts are becoming popular; they reduce greenhouse gases, costs	consider if we need unit price	Reviewed and agreed to include a Note under 3.2 indicating this as an option , if practible.	Completed.
2 - Drainage Maintenance	2-270	Shore, Bank and Watercourse Maintenance		should specify that if permits from MELP and or DFO are required, they will be obtained by the contractor, at their own cost; these are not covered by the agreement we have with MoE re: section 9 approvals;	for consideration	Reviewed and agreed to include as Note under 3.1 that permits are obtained at the Contractors time and cost.	Completed.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
2 - Drainage Maintenance	2-270	Shore, Bank and Watercourse Maintenance	2.2	only reference is to placement of rip-rap, but we should also state that any work requiring earth moving equipment is quantified (to be consistent with 2-250 and 2-260)	for consideration	Wording was included in Draft 2 but decision was to go back to original wording that does not differ between hand work and machine work. May want to re consider in next round.	Potential B item.
2 - Drainage Maintenance	2-280	Engineered Wetland and Water quality Pond Maintenance		not sure this applies to most areas	consider making it a LAS only in areas where it applies	Decision was to establish LAS	Potential B item.
2 - Drainage Maintenance	2-280	Engineered Wetland and Water quality Pond Maintenance		this spec reads like it applies to drainage appliances; also, given the stringent requirements by DFO, the cost of maintaining is not insignificant; should be revised; perhaps we should consider making it a quantified item;	for consideration	Final decision was to re draft as combination routine and quantified with routine undertaken under direction by the province.	Completed
3 - Winter Maintenance		intro to all specs in Chapter 3?		it has been suggested by industry and M.Adlam that we introduce an 'omnibus clause' to mitigate the contractors' and province's risk, e.g., 'The contractor will provide Maintenance Services to the Province, on or in respect of all Highways within the Service Area, in accordance with ther terms and conditions of this Agreement, however, it is understood that it will likely be impossible for the Contractor to conform with the Maintenance Specifications all the time and Contractor will not be considered to be non-conforming during ususual circumstances, when the Contractor is making its best efforts to conform with the Maintenance Specifications and when the Maintenance Contractor remedies the non-conformance as soon as possible	for consideration; it may also make more sense to include in the Agreement rather than the Specs; should review Ontario's language also	Review and report on M. Adlam letter representing the industry was undertaken and prepared including review by MOT staff. Decision that this proposal was not acceptable due to it limiting the responsibility of the contractor and passing risk back to the province.	Completed.
3 - Winter Maintenance		all specs in Chapter 3		there are several response times referred to in the 3 main winter specs; many tied to a different reference point (e.g., time of detection, beginning of event, end of event)	consider simplifying/reducing # of response times and/or reference points	Leave for now. Not the time to undertake changes.	Potential B item.
3 - Winter Maintenance		general		the flexibility that we allow contractors allows them to choose different approaches to dealing with snow - they can apply lots of salt and get to bare quicker, or they can leave more compact, longer; that can have a negative effect on line markings; carbide blades req'd to deal with compact is harder on lines; should we look at indirect cost of allowing the different approaches?	for consideration	Discussed and agreed that locations and conditions are so variable it would be very difficult to establish a Spec. that would cover all circumstances. Also, this gets into specifying method rather than end product. Leave for now. Not the time to undertake changes.	Potential B item.
3 - Winter Maintenance		general		there are sometimes noticeable 'lines' between service areas; both contractors may be in spec, but they use different approaches; should we consider service areas that are more in line with major corridors; (Rick Blixrud's comment)	for consideration	This is not a Spec. issue. Instead it is a management issue and on major routes may be addressed under consideration of "enhanced corridor service" being considered my MOT.	Potential B item.
3 - Winter Maintenance		general		Our specs speak to clearing one lane first; that creates different conditions on the same stretch of highway; should we consider same response times on all lanes?	for consideration	Discussed and agreed that this was not the time to undertake changes on approach or response times.	Potential B item.
3 - Winter Maintenance	3-300	Snow removal		different response times (max allowable accumulations) for different lanes is not very 'practical' in urban areas; nor is the later response times for bus bays	consider rewording	Discussed and this would require a new wording to set a higher standard for urban arterial sections but not the time to do so given extensions status.	Potential B item.
3 - Winter Maintenance	3-300	Snow removal	3.1.h)	no reference to break checks - to be maintained at the same level as the adjacent highway.	include	Decision was to include wording.	Completed.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
3 - Winter Maintenance	3-300	Snow removal	3.1 h)	should it state that maintenance will be in accordance with the specs for 'all other lanes' on Highways of the next lower class from the adjacent Highway; needs to be clarified	for consideration	Addressed and included in rewrite	Completed.
3 - Winter Maintenance	3-300	Snow removal		where is snow measured to determine if Maximum Allowable Accumulation has been reached?; issue for the ministry (consistency in administration) and raised by industry and M.Adlam as issue in litigation	consider clarifying	Addressed and included in rewrite and is now in the Definitions as being accumulated snow allowable on the travelled lanes. Not a perfect solution but the best reached during reviews with staff.	Completed.
3 - Winter Maintenance	3-300	Snow removal	3.1.1a)ii)	timeframes in table are likely tied to use of salt which takes approximately 1 hr to melt snow/ice; the timeframes may be too generous if contractor uses CaCl or another chemical	consider describing the response time in such a way that effectiveness of the chemical is considered;	Discussed and agreed that this was not the time to make changes other than minor word changes..	Potential B item.
3 - Winter Maintenance	3-300	Snow removal	3.1.1a)ii)	industry and M.Adlam are proposing this clause be re-written as follows: 'Notwithstanding the foregoing Maximum Allowable Accumulation, plowing of slush and plowing of broken compact snow that appears particularly hazardous to the Contractor must be conducted within the following timeframes from the end of the last measurable snowfall.'	for consideration	Discussed and agreed that this was not the time to make changes other than minor word changes..	Potential B item.
3 - Winter Maintenance	3-310	Winter Abrasives		we get a lot of complaints about the size of aggregates because of damage to vehicles; other jurisdictions have gone over to 9.5mm; should we consider doing the same?	for consideration	A study on abrasive sizes is being considered by MOT which may lead to revising the current maximum allowable particle size on certain classes of Highways.	Potential B item.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1 b), 3.1.1	3.1 b) states contractor must respond immediately if unsafe conditions are detected or reported; response time table does not say that;	include in response time table	Wording has been changed several times in the table to address this issue and decided on most recent revision. However, 3.1 b) is still in place with minor word changes.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.a)i)	states/implies that the contractor must apply abrasives or chemicals in advance of all events	the intent of the language was to get contractors to start the process before the event actually started - whenever practicable; for consideration - perhaps the intent could be more clearly described	Revised wording to strengthen the need for being proactive.	Completed.
	3-310	Winter Abrasives	3.1.a)i)	industry and M.Adlam are suggesting replacing the word 'minimize' with 'reduce';	for consideration - however, this may be perceived as a reduction in the level of service	Was reviewed by MOT and decision was to leave as written.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.a)ii)	states that the contractor must use RWIS; contradicts section 1.04 of Schedule 20 (not obliged to use info from RWIS); note that not all SA's have RWIS stations; industry and M.Adlam suggest that we amend as follows: 'increasing monitoring of road temperatures and condition forecasts through RWIS where available at locations where RWIS data is relevant, ...	eliminate contradiction; consider proposed language	Proposed wording by industry was adopted , in part, and was included in revisions to Spec.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.a)iii)	industry and M.Adlam suggested adding, at the end of the clause, the words 'as appropriate'	for consideration	Not accepted by Mot. Proposed wording makes little difference to response.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.b)	industry and M.Adlam suggested changes to this clause: 'when a non-forecast event occurs and when hazardous Slippery conditions are detected by or reported to the Contractor, immediately deploy resources to enhance (i.e., THEY PROPOSE REPLACING THE WORD 'RESTORE') surface traction by applying Winter Abrasive and/or chemicals AND DELETING THE REST OF THE CLAUSE (when hazardous Slippery conditions are detected by or reported to the Contractor);	for consideration - however, this may be perceived as a reduction in the level of service	This item has been debated numerous times during review and proposed wording such "improve" is currently in revised Spec. but needs to be reviewed by legal staff.	Potential B item.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.c)	industry and M.Adlam suggested changes to this clause: 'acquire and utilize Road Temperature and Condition (RTC) forecasts, where available and relevant, to determine if a Weather Event could develop that would reduce surface traction on the Highway surface; and, in advance of a forecasted event, respond by pre-treating the Highway surface with Winter Abrasives or anti-icing chemicals, as appropriate for both the location and the Weather Event;	for consideration; also addresses issue of contradiction with Sched.20	Accepted , in part, during review with revised wording now included in current draft.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.d)	industry and M.Adlam suggested changes to this clause: utilize RWIS data where available, at locations where it is relevant, to monitor existing and developing conditions in order to better time the application of Winter Abrasives or chemicals, as appropriate for the location and the Weather Event, in advance of a Weather Event;	for consideration; also addresses issue of contradiction with Sched.20	Accepted , in part, during review with revised wording now included in current draft.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.e)	industry and M.Adlam suggested changes to this clause: utilize RWIS data, (DELETE 'if available' AND REPLACE WITH where available at locations where RWIS data is relevant, to determine if previous chemical application residuals are sufficient to maintain pre-weather event surface traction when a Weather Event is forecast, and to determine if applications of additional anti-icing or De-icing Chemicals are required to maintain surface traction;	for consideration; also addresses issue of contradiction with Sched.20	Accepted , in part, during review with revised wording now included in current draft.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.1.b)	industry and M.Adlam suggested changes to this clause: DELETE 'restore' AND REPLACE WITH 'enhance' traction within the response times, from the time the deficiency was detected by or reported to the Contractor, as specified in the following table	for consideration - however, this may be perceived as a reduction in the level of service	Same decision as noted above. New wording "improve" is currently in the revised Spec. but requires legal staff input.	Potential B item.
3 - Winter Maintenance	3-310	Winter Abrasives	3.3	industry and M.Adlam suggested changes to this clause: ADD 'not' AFTER 'The contractor must' AND use materials and chemicals (DELETE 'used in' AND REPLACE WITH 'that are not identified for snow and ice control DELETE 'from' AND REPLACE WITH 'in' the Recognized Products Lists or as accepted in writing by the Province for use on Highways; the intent here is to make it clear that the contractor does not have to use materials all the time, but when materials are used, they must be on the RPL.	for consideration; also consider whether we need to make that distinction in other specs…	Not accepted by Mot. Leave as written.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives		issues with calcium chloride in SA21; should we review use of product?	for consideration	No final decision made on this issue. Suggested it might had been a one comment and no longer an issue.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.1 b) iv	Should there be a shorter resoinse time?	Raised during review sessions.	For consideration in next round.	Potential B item.
3 - Winter Maintenance	3-310	Winter Abrasives	3.3	states that Materials must be on the RPL; the RPL states that Calcium Chloride must conform to CGSB Spec 15-GP-1M; reference to CGSB was unintentional - should we retain, or remove?	for consideration	Never was clarified and remains as written. No comments on issue were made during review sessions.	Completed.
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control	3.1 3.1.p)	- No reference to compact snow removal - abrasive should be a requirement for structures under 5% grade.	for consideration	Reviewed and decided to leave for now and next round.	Potential B item.
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control		should this read: the Contractor will not allow snow/ice accumulations to exceed 30cm	for consideration	Reviewed and decided to leave for now and next round.	Potential B item.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control		should consider removal of snow from behind and in front of barriers. Removal of snow in front that forms a ramp like affect could compromise the barrier.	Raised during reviews.	To consider during next round.	Potential B item.
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control	3.1.d)	refers to clearing snow accumulations against Median barriers; what about roadside barriers?	for consideration	Is currently in the Spec.	Completed.
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control	3.1.s)	should this read: the Contractor will not allow snow/ice accumulations to exceed 30cm	for consideration	Reviewed and decided to leave for now and next round.	Potential B item.
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control	3.1.1.a)	issue in SA26 (complaints from public) regarding response times for clearing snow in rest areas; Don Ramsay proposed that we review	for consideration	Reviewed and decided to leave for now and next round.	Potential B item.
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control		should consider including removal of snow and ice from paved Highway shoulders especially those with painted bike lanes.	Raised during reviews.	Reviewed and decided to leave for now and next round.	Potential B item.
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control		should consider cleaning ditches immediately if ground is frozen and may be subject to quick thaw resulting in flooding.	Raised during reviews.	Reviewed and decided to leave for now and next round.	Potential B item.
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control	3.1.1.a)	industry and M.Adlam suggested changes to this clause: complete the clearing of snow and ice on Highways, and DELETE 'restore' AND REPLACE WITH 'enhance' traction on pedestrian facilities	for consideration - however, this may be perceived as a reduction in the level of service	As noted above, revised Spec. uses the term "improve" but will require legal staff input.	Potential B item.
3 - Winter Maintenance	3-340	Highway Condition Reporting		this spec relates not only to winter, but all year;	shouldn't it be in another Chapter?	Reviewed and relocated to Chapter 8 and new # 8-860	Completed.
3 - Winter Maintenance	3-340	Highway Condition Reporting	3.1.b)	states that the contractor reports fatalities and other major accidents to the DMT; actual practice is to contact PHCC; new protocols being discussed - need to reflect into spec	for consideration; do we need to include both PHCC and district?	Reviewed and changed wording to read Province rather than DMT.	Completed.
3 - Winter Maintenance	3-340	Highway Condition Reporting	3.1.1	reporting times of 5:00, 9:00 and 1:00 in winter - should we revise?	for consideration; should we ask for report around 3:00 or 4:00? Is the 1:00 report useful?	Reviewed and changed timing to 5 am, 7 am and 3 pm during winter and 7 am and 3 pm summer.	Completed.
3 - Winter Maintenance	3-340	Highway Condition Reporting	3.1.1	Does not address immediate notification of closures.	include in response time table/section	Reviewed and included in revisions.	Completed.
3 - Winter Maintenance	3-340	Highway Condition Reporting		especially when we first implemented Drive BC, there were inconsistencies in how we described expectation;	review latest Drive BC processes and ensure there are no inconsistencies and/or omissions in spec	Reviewed and reference to Drive BC including processes and formats for reporting under 3.1 b)	Completed.
3 - Winter Maintenance	3-340	Highway Condition Reporting		TAC has issued guidelines for reporting road conditions; intent is for public to see/hear consistent terms when dialing 511	consider adopting terminology	Discussed and it was agreed to leave for now given it is a work in progress within MOT.	Potential B item.
3 - Winter Maintenance	3-340	Highway Condition Reporting		if the conditions remain stable for an extended period of time, Drive BC shows no change; there is no 'evidence' that the contractor is checking that the conditions in Drive BC accurately describe road conditions;	for consideration - do we need to change Drive BC to allow the contractor to 'confirm' conditions at the appropriate response times? Or do we require the contractor to keep documentation to provide that evidence?	Reviewed and discussed with decision it is a process/procedure issue rather than a Spec.	Completed.
4 - Roadside Maintenance	4-350	Roadside Mowing		separate mowing and brushing into separate specs (as in Round IV) - too much was lumped together and in now unclear	for consideration	Two Spec's. were drafted and accepted: 4-350 Mowing and 4-360 Brushing and Danger tree…	Completed.
4 - Roadside Maintenance	4-350	Roadside Mowing	3.2 Note	allow the contractor to control 'noxious weeds' beyond the ditch back slope in provincial parks within the RoW;	for consideration	Yes. Add the clarification (as per mtg November 2010).This was included during revisions but decision was to remove and make it a B item.	Potential B item.
4 - Roadside Maintenance	4-350	Roadside Mowing	3.2.h)	- Concern with mowing that only the max height is set. - Would like it changed to the height at which they have to start mowing.	for consideration	This was reviewed but decision was made to leave as is for now and next round consideration.	Potential B item.
4 - Roadside Maintenance	4-350	Roadside Mowing	3.2e)	should we reinstate minimum length of finished product for mowing; suggest 15cm instead of 'lowest height possible'	for consideration	This was reviewed but decision was made to leave as is for now and next round consideration.	Potential B item.
4 - Roadside Maintenance	4-350	Roadside Mowing	3.2.a)iv)	refers to removing vegetation that constitutes noxious weeds; we don't specifically state that the contractor is not to use herbicides; should we be specific?	for consideration (see recommendation under LAS re allowing herbicides for certain noxious weeds)	This issue was never fully resolved and is now left as a issue to be delt with.	Potential B item.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
4 - Roadside Maintenance	4-350	Roadside Mowing	3.2.a)iv)	MoT's bound by the Weed control Act to control the spread of noxious weeds, should we pass that on to the contractor?	for consideration	Not agreed to has to remain an issue for consideration in next round.	Potential B item.
4 - Roadside Maintenance	4-350	Roadside Mowing	3.2.a)iv)	Do we want the Invasive Plant Best Practices guide to become mandatory?	for consideration	Reviewd and decision was No. the guide remains as non mandatory.	Potential B item.
4 - Roadside Maintenance	4-350	Roadside Mowing		add a requirement that the contractor meet with the Regional Weed Committees in their area at least once during the annual work planning stage to discuss timelines and locations of planned works	for consideration	Yes. Add the requirement (as per mtg November 2010). This was included during revisions but decision was to remove and make it a B item. The issue surounding weeds has for the most part set aside for next round.	Potential B item.
4 - Roadside Maintenance	4-350	Roadside Mowing		add a requirement that the contractor take noxious weed locations into consideration when planning and performing vegetation control activities - plan to mow at appropriate time (prior to development of see) and skip areas if required (if NW have already gone to seed) but do not present a sightline orother safety issue;	for consideration	Yes. Add the requirement (as per mtg November 2010). Same decision as above on weeds. 3.1.1 b) says cut prior to development of seed but that is all. Remaining issue points are B items.	Potential B item.
4 - Roadside Maintenance	4-350	Roadside Mowing		add a requirement that the contractor report noxious weeds to 888-WEEDSBC, to the regional weed committee, or online via Report a Weed;	for consideration	Yes. Add the requirement (as per mtg November 2010) Same decision as above it was included in revisions buit was removed as with other weed related suggestions.	Potential B item.
4 - Roadside Maintenance	4-350	Roadside Mowing		dispose of Noxious Weeds in an appropriate manner	for consideration	Yes. Add the requirement (as per mtg November 2010) WILL NEED TO DEFINE 'APPROPRIATE' Same decision as above regarding weeds.	Potential B item.
4 - Roadside Maintenance	4-350	Roadside Mowing		report to the Ministry where they have deposited materials that are known to contain noxious weeds (including material from perimeter of bridges) so that the ministry may treat those sites;	for consideration	Yes. Add the requirement (as per mtg November 2010) WILL NEED TO DEFINE 'APPROPRIATE' Same decision as above regarding weeds.	Potential B item.
4 - Roadside Maintenance	4-350	Roadside Mowing		add a clause stating that the contractor is NOT allowed to distribute material to the public that is known to contain noxious weeds;	for consideration	Yes. Add the clause (as per mtg November 2010) WILL NEED TO DEFINE 'APPROPRIATE' Same decision as above regarding weeds.	Potential B item.
4 - Roadside Maintenance	4-350	Roadside Mowing		Need to consider setting a time and approach to mowing around signs and other fixed objects.	For consideration and was raised during regional reviews.	Agreed to include in next round.	Potential B item.
4 - Roadside Maintenance	4-360	Roadside Brushing and Danger Tree Removal	3.2.f)	industry and M.Adlam suggested that there are issues with the currentl language on Danger Trees; it is being interpreted by the courts that the contractor must assess all trees that could be construed as 'danger trees'; their proposal is to limit the contractor's responsibility to removing trees the contractor has received notice are Danger Trees and thereby removing the responsibility to identify and assess trees/having someone on staff trained to assess trees	for consideration, however, we need to be clear who has the responsibility to identify and assess trees; perhaps a clearer definition of Danger Tree would address the problems; refer to letter from M.Adlam dated November 15 for details of proposed language change	No. Decision by MOT that it should remain a resposibilty of the Contractor to have the assessent done by a qulified person.	Completed.
4 - Roadside Maintenance	4-360	Roadside Brushing and Danger Tree Removal	3.2.f)	it was never the intent that contractors would be require to remove large stands of tress (because of forest fires, or Pine Beetle, etc.); we should clarify	for consideration	See Note 3.1 2) which defines and limits the Contractor's responsibility.	Completed.
4 - Roadside Maintenance	4-360	Roadside Brushing and Danger Tree Removal	3.2.k)	speaks to removing vegetation within 5 m perimeter but does not indicate maximum height;	for consideration	Proximity to bridges and removal was reviewed but to leave for now was the decision.	Potential B item.
4 - Roadside Maintenance	4-360	Roadside Brushing and Danger Tree Removal		Gradall machine & mower attachments create a real mess. No specific requirement to dispose and remove these cuttings. Not just esthetics but could be a fire hazard.	for consideration	It was agreed that this method is not the best but cannot change at this date. Original wording does, however, address clean up and is carried into revisions. In next round should consider alternative methods.	Potential B item.

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4 - Roadside Maintenance	4-360	Roadside Brushing and Danger Tree Removal	3.2 n)	Danger tree removal; need to review entire clause; remove Danger Trees and vegetation on private land that restrict Sight Distrance **and** are unsafe **or** have the potential to become unsafe for Highways Users, after securing permission from the landowner, **or** if unable to secure permission in a timely manner, notify the Province immediately and perform vegetation control as directed by the Province; REVIEW USE OF AND/OR;	for consideration	Changes along the lines suggested by the industry were accepted in the revisions. See 3.1 j).	Completed.
4 - Roadside Maintenance	4-360	Roadside Brushing and Danger Tree Removal		Should we make it clear that if there are a large number of trees, e.g., beetle kill, forest fire etc.; that the UP will not apply	for consideration	See Note 3.1 2) which defines and limits the Contractor's responsibility.	Completed.
4 - Roadside Maintenance	4-370	Litter Collection & Graffiti Removal	3.1.1.a)	in response time table, does mention of Hwy 1 and other Lower Mainland hwys, conflict with reference to highways with traffic volumes over 50,000/day?	for consideration	The conflict is recognized but decision was to leave as is and address /clarify in the next round. Also, Urban Highways needs defining.	Potential B item.
	4-370	Litter Collection & Graffiti Removal	2.1	All services for this Maintenance Specification are Routine'	fix (formating consistency)	Addressed with new format.	Completed.
4 - Roadside Maintenance	4-370	Litter Collection & Graffiti Removal	2.1.a)	Remove "graffiti"; graffiti is covered in 2.1.c)	remove and review 2.1.c)	Addressed with new format.	Completed.
4 - Roadside Maintenance	4-370	Litter Collection & Graffiti Removal	2.1.d)	policy for dealing with abandonned vehicle has been revised	review section and latest policy to ensure consistency	New wording addressing this issue has been included in rewrite.	Completed.
4 - Roadside Maintenance	4-370	Litter Collection & Graffiti Removal		Need to include the removal of debris and litter found under bridges. Big problem in Lower Mainland.	for consideration was raised during Regional reviews.	Agreed to consider in next round.	Potential B item.
4 - Roadside Maintenance	4-370	Litter Collection & Graffiti Removal		growing issue with public leaving old applicances, dirty needles in garbage bins or on R/W; should we specify that removal is a requirement; make it quantified?	for consideration	New wording addressing this issue has been included in rewrite.	Completed.
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance	2.1	All services for this Maintenance Specification are Routine'	fix (formating consistency)	Addressed with new format.	Completed.
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance		unclear who is responsible for payment of electrical, sewage pump, water payments etc. at rest areas.	Review language in spec to ensure it reflects: 1. Rest Area Electrical directly connected to luminaire poles in local vicinity - Ministry responsible for payment through BC Hydro 2. Rest Area facility metered separately from overall Hydro agreement with Ministry - Contractor responsible for payment 3. Water Usage Issue: Contractor responsible for payment where water usage is metered separately.	This was clarified and wording drafted in Draft 2 but decision to remove at this time was made. Remains as an item for next round.	Potential B item.
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance		water testing was included as a LAS in some areas once it became apparent that MoE was no longer providing the service; perhaps it should be included in the spec for all areas	for consideration; if not included in this spec, then if the recommendation is to continue as a LAS, ensure that is communicated and included as LAS where needed	Leave for next round.	Potential B item.
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance		Parks has to deal with this issue also - they are considering giving a contract to a specialized firm to deal with water testing in parks - they are willling to consider including some of our sites	for consideration	Leave for next round. However, if an opportunity arises with Parks it should be persued prior to next round.	Potential B item.
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance	3.1.1	response times for Class B & C are not clearly defined; most people are unaware of the note; and, it actually requires a higher level of maintenance on B & Cs than As, speci. With respect to 3.1.1xii (washing walls is req'd 2/week on a B/C; only weekly on a A	consider creating an actual chart for B's and C's and review the expectations.	Two separate tables created for Class A and Class B.	Completed.
	4-380	Rest Area and Roadside Facility Maintenance	3.1.1	requirement to remove noxious weeds daily does not appear to be understood - reinforce the language	for consideration	Yes. Add the requirement (as per mtg November 2010).Wording included in revision.	Completed.
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance	3.1.1	it has been suggested that the response times should be coordinated with the patrol times, i.e., ensure that 2 activities can be performed by same individual; may be more cost effective;	for consideration	Leave for next round but is not considered really practicable due to it is not likely patrols are carried out with garbage trucks.	Potential B item.

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4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance		Patching/landscaping/mowing beyond normal R/W mowing	These are not included specifically in the specs but are a "quantified" work item within the contract and can be undertaken if MC/District agree.	No changes made. Work can be completed under other work items as noted under Comments/Recommendations.	Completed.
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance		There is no longer a requirement for the contractor to paint the outside of the buildings; should we add back in for next round?	for consideration	Leave for next round.	Potential B item.
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance		issue in SA26 (complaints from public) regarding response times for clearing snow in rest areas; Don Ramsay proposed that we review	for consideration	Class A is daily or more often as required but if extended to Class B and C would have to be considered a B item for next round.	Potential B item.
4 - Roadside Maintenance	4-380	Rest Area and Roadside Facility Maintenance		We don't specify the expectation that the pullouts for Community Mailboxes will be maintained	should define the expectations; discuss MC expectations v. Canada Post responsibilities; be clear in the spec; may also require a change to the definition of Roadside Facility;	Leave for next round.	Potential B item.
4 - Roadside Maintenance	4-400	4 - Roadside Fence Maintenance		may need to tweak language for wildlife fencing; fences have been neglected; mot considering investing $ to bring fences back up to maintainable standard	stay in touch with Greg's group	This could be best addressed by special funding rather than changing Specification.	Completed
4 - Roadside Maintenance	4-400	4 - Roadside Fence Maintenance		may need some new language re amphibian fencing	for consideration	Leave for next round.	Potential B item.
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.1.1.a)	numbering is out in the table; goes from iv) to vii)	fix (typo)	Fixed with rewrite.	Completed.
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.1.1 - Response Times	Are subsections for response times for scheduling of routine maintenance services interpreted sequentially or independently? - Contractor will not replace reflectors during mild winter. - If b) and c) are treated independently, the contractor is obligated to replace. - application of b) and c) response times year round met with limited success.	Intent: Section a) interpreted separately from section b) and c). Contractor responsible to do work if missing reflectors impact safety.	As discussed, response time interpreted separately. Replacement of reflector timing an enforcement issue not Spec. Response times being met with limited success is also an enforcement issue not Spec.	Completed.
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.1 and 3.1.1c)	response time for re-painting posts, but no reference in 3.1 that it is a responsibility; if add to 3.1, should specify that treated posts do not have to be painted	specify	Responsibility was included under revision 3.1 c) but treated /nontreated post issue not fully resolved.	Completed in part but need to consider treated/non treated issue issue (potential B item).
5 - Traffic Maintenance	5-440	Sign System Maintenance		we have been accepting sign posts without a concrete base; it is not clear in the spec whether this is acceptable; do the Standard Specs for Hwy Const address this?	for consideration	Sign base issue is under review by MOT with revised/updated T Circular pending. Need to follow up on this issue.	Potential B item.
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.1.e)	when contractor seeks approval for re-ordering and design of guide signs and special information signs, they obtain the detail and specifications required to get the sign manufactured; perhaps we should specify that;	for consideration	Direction on ordering is found under 4.1 a) Materials and 3.1 g).	Completed.
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.1.f)	by 'be responsible for' means that the contractor should care for the sign until it is claimed by the owner; perhaps we should be explicit in the spec	for consideration	Fixed with rewrite.	Completed.
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.2.1	seems to imply that all sign installations/re-installations must be approved by the Province; do we need to clarify?	for consideration	No. Direction found under 3.1 d) and 3.2.1 a).	Completed.
5 - Traffic Maintenance	5-440	Sign System Maintenance		unclear whether replacement of posts in routine; there is no item and price in Schedule 5	if it's decided that this should be quantified, consider adding price for post only (in Schedule 5), although there may be a need for different types of posts (telspar, wood)	Reviewed and agreed that replacement of posts remains as a routine item.	Completed.
5 - Traffic Maintenance	5-440	Sign System Maintenance		there is inconsistency in how multiple sign faces on one post are credited; e.g., 2 G07s on one post is less than 1m2; is it one credit or 2? Do we need to specify?	for consideration	Decision was not to address this issue at this time.However, will be considered in next round.	Potential B item.

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5 - Traffic Maintenance	5-440	Sign System Maintenance		Need to reconsider how MOT prices signs (provisional sum?) Also, how to price sign install that does not include a post?	Reviewed and discussed during regional reviews	Agreed to leave as is for now but consider in next round.	Potential B item.
5 - Traffic Maintenance	5-440	Sign System Maintenance	3.2.1 a) to d)	All items from a) to d) require further discussion and review. MOT should qualify what are its expectations and reconsider when should these signs be replaced.	Reviewed and discussed during regional reviews	Agreed to leave as is for now but consider in next round.	Potential B item.
5 - Traffic Maintenance	5-540	Sign System Maintenance	3.1.1 c)	Under 3.1.1 c) signs and delineator touch up and repaint should be seperated as items noting delineators to be painted but treated posts do not.	Reviewed and discussed during regional reviews	Agreed to leave as is for now but consider in next round.	Potential B item.
5 - Traffic Maintenance	5-540	Sign System Maintenance	3.1.1 e) and g)	The possibility of quantifying replacement of surface reflectors over specified distance and % loss should be consider including the replacement of Guardrail and animal reflectors under similar circumstances.	Reviewed and discussed during regional reviews	Agreed to leave as is for now but consider in next round.	Potential B item.
5 - Traffic Maintenance	5-440	Sign System Maintenance		Engineering (K.Baskin) is leading a review of installation standards for posts and bases; need to follow up with recommendations to see if it has an impact on maintenance spec	for follow-up	Information provided was that the review and update of base installation was still in progres and an updated T Circular will be provided in the near future.	Completed.
5 - Traffic Maintenance	5-450	Temporary Line Marking and Eradiction	2.1	change to read: all services for this maintenance specifcation are routine. Also, Contractor should be responsible for re installing permanent lines when pavement repair and patching is extensive.	fix (formating consistency) In addition to an earlier fix related to formatting, the issue of re installing permanent lines was raised during regional reviews.	Fixed formatting with rewrite. Re installing permanent lines to be considered in next round.	Completed formating and Potential B item on other issue.
5 - Traffic Maintenance	5-470	Highway Traffic Control	2.1.c	Perform initial traffic control - what does "initial" mean?	consider taking the word 'initial' out; develop in conjunction with 7-780	Te term "initial" was relaced with "perform" was the decision.	Completed.
6 - Traffic Maintenance	5-470	Highway Traffic Control	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)	Fixed with rewrite.	Completed.
5 - Traffic Maintenance	5-470	Highway Traffic Control	3.1.g)	- Does not make sense: Obtain the prior written approval of the Province temporary traffic control signals.	fix (typo) - should read: Obtain the written approval of the Province to use temporary traffic control signals.	Fixed with rewrite.	Completed.
6 - Traffic Maintenance	5-470	Highway Traffic Control	3.1.d)ii)	need to add graders on list of exceptions	we committed to doing that last time but it was missed	Added during rewrite.	Completed.
6 - Structure Maintenance	6-500	Bridge Deck Maintenance		is the replacement of wheelguards routine?	for consideration	It is assumed to be Routine being a component of the Bridge Deck Systems but would be relaced under 6-690 Bridge Railing Maintenance. The latter Spec. has a Material reference on timber requirements	Completed.
6 - Structure Maintenance	6-500	Bridge Deck Maintenance		Concrete patch strength chart was removed from specification and is not available anywhere else (i.e. standard specs)	consider including	Was included in Draft 2 but after regional reviews it was decided to remove for next round.	Completed.
6 - Structure Maintenance	6-500	Bridge Deck Maintenance		Should there be a two tier pricing system for deck repairs based on degree of repair and in case of concrete decks the depth of repair.	Raised during regional reviews.	Leave for next round.	Potential B item.
6 - Structure Maintenance	6-500	Bridge Deck Maintenance	3.2 b) v)	Bridge Deck crack sealing regarding injection method/ materials and depth of injection needs to be reviewed.	Raised during regional reviews.	Leave for next round.	Potential B item.
6 - Structure Maintenance	6-500	Bridge Deck Maintenance	3.3 b) iii)	issue regarding 'treated' lumber and what is acceptable (see file on issue)	for consideration	This was discussed during regional reviews and the answer still remains one to be further developed. It was agreed at one session that BC treated material should be accepted but it remains more specific agreement.	Potential B item.
6 - Structure Maintenance	6-500	Bridge Deck Maintenance		should more of the work be quantified? Unit of measure could be board feet for timber	for consideration	It was agreed to leave for now without clear understanding on cost changes.	Potential B item.
	6-500	Bridge Deck Maintenance		linseed oil treatments - there are no methods in the maintenance spec; the spec states that the contractor must follow materials only from SSHC; even if it required materials and procedures, there are no procedures specific to linseed oil treatments in the SSHC (s.418)	do we need to clarify; see also note in General re problem with staff turnover and lack of expertise in various maintenance processes	Future Training Program could help but in the mean time instruction as written remains including a Note following 3.2.1 which recommends process to be conducted "with normally accepted good practice and approved by the Province". Suggest leave as is.	Completed.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
6 - Structure Maintenance	6-510	Bridge and Structure Cleaning	3.1.1.b)	not clear what this says - are requirements under b) in addition to a)?	consider specifying; and/or taking out 3.1.1b)iv)	Decision was to leave as written. Work item a) just notes the component sections to be cleaned (horizontal and vertical) while b) sets a minimum height of 3 meters for cleaning vertical surfaces. There is no conflict but may want to reconsider revising the wording	Completed but may want to revisit.
6 - Structure Maintenance	6-510	Bridge and Structure Cleaning		Do we need a definition of "Structure" ?	The use of the term Structure is used interchangeably for a number of assets such as bridges, retaining walls, tunnels, ped underpasses, etc. In discussion with Bridge Branch staff agreement could not be reached on how to arrive at a suitable distinction so was left alone. It is really a circular arguement to arrive at a workable definition.	Leave it for now but if time is permitting the issue can be revisited.	Potential B item.
6 - Structure Maintenance	6-510	Bridge and Structure Cleaning		we have an agreement with MoE that section 9 permits will be issues free of charge; contractors apply on behalf of the ministry; should we specify that in the spec?	for consideration	Included in 3.1 Note 2.	Completed.
6 - Structure Maintenance	6-510	Bridge and Structure Cleaning		should we make cleaning a quantified activity?	for consideration	Leave for next round but must consider the possibility that less cleaning could take place because of quantity limits.	
6 - Structure Maintenance	6-510	Bridge and Structure Cleaning		do we have to wash every bridge every year, or can we id some that could be done less often?	for consideration	Leave for next round but must consider the preventative value of annual cleaning.	Potential B item.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
6 - Structure Maintenance	6-510	Bridge and Structure Cleaning	3.1.a)	should it read 'wash' rather than 'clean'	for consideration	Was considered but did not want to open up the issue at this time.	Potential B item.
	6-520	Bridge Drain and Flume Maintenance	2.1	change to read: all services for this maintenance specification are routine. Also, should we include Structure in the title and Objective because other structures include drains.	fix (formating consistency). Discussion during regional reviews raised second item for consideration.	Fixed with rewrite. Decided to leave second item for next round.	Completed formatting item but remaining item is a Potential B.
	6-560	Bailey and Acrow Bridge Maintenance	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)	Fixed with rewrite.	Completed.
	6-570	Minor Painting of Bridge Structures	2.2	change to read: all services for this maintenance specifcation are Quantified	fix (formating consistency)	Fixed with rewrite.	Completed.
6 - Structure Maintenance	6-570	Minor Painting of Bridge Structures		Round IV defined what timber rail painting included and how it was to be measured as..."timber rail painting will be determined by a single horizontal unit measure of railing, where a unit measure of railing consists of the entire design structure of the railing, including rails, posts and/or wheelguards.".This has been removed from the specs and now the contractor wants to get paid for metres of rail systems AND for metres of wheelguards, whereas n the past, it has always been rail sysems including wheelguards.	for consideration	Was discussed extensively during regional reviews but decided to leave for next round which would reinstitute a measure such as vertical/horizontal meters.	Potential B item.
	6-600	Concrete Structure Maintenance	2.2	change to read: all services for this maintenance specifcation are Quantified	fix (formating consistency)	Fixed with rewrite.	Completed.
	6-605	Steel and Aluminum Structure Maintenance	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)	Fixed with rewrite.	Completed.
6 - Structure Maintenance	6-620	Timber Truss Bridge Maintenance		there is no reference to inspection of truss rods; should we add to routine? Or quantified? If quantified, do we want a separate price (should be less costly than drop and replace)	for consideration	"Inspect" was included in draft 2 but removed as a Routine item under 3.1 g). Decision was to leave for next round or possibly look to developing a LAS covering the remainder of Timber Trust Bridges.	Potential B item.
6 - Structure Maintenance	6-640	Bridge Piling Maintenance	3.2 Note 2	not clear whether the $35,000 cap applies to a singular Pile or to Piles	for consideration	Decision was to define as Piles rather than Pile being applied to the cap.	Completed.
6 - Structure Maintenance	6-640	Bridge Piling Maintenance	3.1.1 a)	Traffic Control' is not a defined term	fix (typo)	Fixed with rewrite.	Completed.
6 - Structure Maintenance	6-660	Retaining Structure Maintenance	3.1.1.c)	missing word 'response'	fix (typo) should read, ...deficiencies within the response time, from the time....	Fixed with rewrite.	Completed.
6 - Structure Maintenance	6-660	Retaining Structure Maintenance	3.1 d)	only ref. Credits under 6-640 for timber structures; should also ref. Credits under 6-600, or alternatively, consider creating more unit prices in Schedule 5 for various types of retaining structures	for consideration	Agreed to provide Credit for replacement of concrete components under Concrete Structure Maintenance,	Completed.
6 - Structure Maintenance	6-660	Retaining Structure Maintenance		Who takes the lead role on repairs that may require the input from a Geotechnical Engineer? The Bridge Sructural Engineer or Geotechnical Engineer?	Issue raised during regional reviews.	This is an internal management/process issue that can be addressed at any time to provide clarification.	Potential B item but can be addressed at any time.
6 - Structure Maintenance	6-660	Retaining Structure Maintenance	3.1 e)	clean out accumulations of Debris behind Retaining Structure	we don't require cleaning out accumulations except for certain structures	Decision was to include wording "designated by the Province" but decision reversed and left as a B item.	Potential B item.
	6-680	Multiplate Structure Maintenance	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)	Fixed with rewrite.	Completed.
6 - Structure Maintenance	6-680	Multiplate Structure Maintenance		Is there a need for a "tunnel" Spec.? Alternatively, determine the number of structures in inventory that could be defined as a "tunnel" and establish LAS.	for consideration.	Leave for next round.	Potential B item.
	6-680	Multiplate Structure Maintenance	2.2	typo (a) appears in front of 'Not applicable';	remove a) (typo)	Fixed with rewrite.	Completed.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
6 - Structure Maintenance	6-690	Bridge Railing Maintenance	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)	Fixed with rewrite.	Completed.
6 - Structure Maintenance	6-690	Bridge Railing Maintenance	3.3b)ii)	states that material for Wheelguards must be untreated; in practice we allow treated; if untreated, do we want them painted?	for consideration	New wording allows for painting untreated wheel guards but is silent on treated, Consider as complete.	Completed.
6 - Structure Maintenance	6-690	Bridge Railing Maintenance		issues around how to quantify amount painted	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6-530	Bridge Joint Maintenance		Bridge approaches requiring pavement patching when "but joints" are replaced should be included with credit under 1-100 and included under	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6-530	Bridge Joint Maintenance	Note 2	Is the $35,000 figure still a good dollar amount or does it need reconsideration?	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6-540	Bridge Joint Maintenance		Need to examine the need for Seismic servicing which could be considered as a new Spec.?	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6-540	Bridge Bearing Maintenance	3.1 c)	Repair to bearing beyond routine work ,should be quantified.	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6-570	Minor Painting of Bridges Maintenance		Painting is an on going issue requiring attention. There is a need to establish a better understanding of painting cost and possibly limit it to $35, 000 per structure. Need to determine in next round how to measure painting of steel rail systems and overall should consider an end product requirement for all structures including preparation, manufacturer's spec., painting over rust and rotted wood and disposal.	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6-605	Steel and Aluminum Structure Maintenace	3.1 b)	As a routine item should include repairs to seismic refit components.	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6- 620	Timber Truss Bridge Maintenace		An inventory of remaining Timber Truss Bridges is required and if numbers warrant it, should consider establishing a LAS for remainder. Also, if it remains as a current Spec. should consider including the wording "inspect" Truss Rods in (3.1 g)) and review what current routine items should be added to quantified.	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6-640	Bridge Piling Maintenance		Repair of damaged Bridge Pilings (3.1 a)) should be considered as a quantified rather than routine item. Also, should consider including, if applicable, maintain, repair or replace defensive structures for	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6-650	Timber and Log Structure Maintenance		In addition to Timber Truss Bridges an inventory of Timber and Log Bridges should be undertaken to determine if the numbers a re low that the work be undertaken under a LAS.	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6-740	Debris Torrent Structure Maintenance		Changes were made to revise the Spec. to a combination of routine and quantified. Other services such as haul and dispose of waste and culverts designed to take water cleaned and restored to bed level should be included in future. Possibility of establishing service as a LAS should also be considered.	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6-600	Concrete Structure Maintenance		Consider including the need to remove surface scaling before becoming a safety issue as another requirement.	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
6 - Structure Maintenance	6-560	Bailey and Acrow Bridge Maintenance	3.1 b)	Maintain, repair or replace damaged or deteriorated components should be a quantified item.	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.

Maintenance Specifications Issues

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
6- Structures		all		clarify the responsibilities of the MC with respect to a) submitting repair proposal details for approval when req'd; and b) supplying engineering services as needed to accomplish repairs, e.g., substituting components when replacement of original components is not feasible; and clarify who pays	for consideration	Decision was to introduce new wording regarding Province approval or Bridge Structural Engineer approval as applicable.	Completed.
7 - Emergency Maintenance	7-760	Flood Control and Washout Response	3.1.1.c)	provides credit for placement of rip-rap; this in inconsistent with 2.1 which states that all work is routine; also leads to inconsistencies in applicationand confusion when read in conjunction with the Intro (financial caps)	need to clarify; need to consider along with changes to section H of the Introduction	This is one of several Specifications having this "option"of applying quantified credits if agreed to. No change was initiated during the review/revision process but was decided to leave for next round.	Potential B item.
7 - Emergency Maintenance	7-760	Flood Control and Washout Response	3.1.1.b)	currently reads 'immediately establish at least one through lane...'	consider changing to: 'immediately restore at least one through lane'	Agreed to recommended wording.	Completed.
8 - Emergency Maintenance	7-770	Mud, Earth and Rock Slide Response	3.1.1e) and f)	reads 'control' instead of 'provide traffic control'	fix (typo)	Fixed with rewrite.	Completed.
	7-780 and intro	Highway Incident Response		the introduction to the specs, section I DGP, states that all damages to Government Property will be repaired as Routine regardless of whether the costs to repair those damages are reccoverable or whether the Province reimburses the contractor for any costs recovered... However, 7-780, s. 3.1b)viii) states that repairing damage caused by incidents or vandalism will be credited under the applicable spec if cost to repair not recovered under CMC; a legal opinion stated that it was all routine, however we allow credits under quantified	should we revisit that decision? If not, the introduction should be amended to reflect that DGP is repaired as routine and/or quantified.	Was reviewed and decided to include a new Note 2 allowing for the "option" of using quantified credits for repairs not covered by CMC. It is an option even though the intent of the Spec. is to carry out service as routine. Not sure this is the best option but leave for now and revisit in the future.	Potential B item.
8 - Emergency Maintenance	7-780	Highway Incident Response		intent was to have contractor contact provincial ministry of environoment for advice on spills (detection/handling) and/or CANUTEC; very difficult now to get advice from either of those sources;	contacted Greg Czernick July 11/11 for advice/assistance; Greg suggested changing to 'call PEP' see email dated July 12 from Greg	A new item was included (3.1. b) iii) regarding Contractor to provide support to the "Motor Vehicle Incident Strategig Response Protocol". Also,reference to PEP is already included under (3.1. c) i))	Completed.
8 - Emergency Maintenance	7-780	Highway Incident Response		MVIR Protocol should be referenced in the spec;	for consideration; should be a reference to the most current to avoid having to amend every contract if/when the protocol is revised	Included during rewrite.	Completed.
8 - Emergency Maintenance	7-780	Highway Incident Response		new process that J.Bennetto/Tracy Cooper are working on may impact this spec	needs to be considered for any impacts on the spec	Little or no information on results of review at this time. Consider as complete.	Completed..
8 - Emergency Maintenance	7-780	Highway Incident Response		need to incorporate TM at accident sites in contract	one option is to make it a PS (quantified), or PS that if not used, would go back into improvements; or set a financial cap/year to limit contractors' risk; or make it all routine (no cap)	Decision was to leave for next round.	Potential B item.
7 - Emergency Maintenance	7-790	Snow Avalanche Response		why is this included in all contracts; shouldn't it be a LAS where applicable?	for consideration	It was decided that there are too many sites under control (small and large) to make a LAS a practical option.	Completed.
7 - Emergency Maintenance	7-790	Snow Avalanche Response		numbering is inconsistent; General Perf spec, s. 2 Routine should say 2.1; Quantified should be 2.2; Detailed Perf spsec, s.3 Routine should be 3.1;	fix (typo)	Fixed with rewrite and new format.	Completed.
8 - Emergency Maintenance	7-790	Snow Avalanche Response	2.1	change to read: all services for this maintenance specifcation are routine	fix (formating consistency)	Fixed with rewrite and new format.	Completed.
7 - Emergency Maintenance	7-790	Snow Avalanche Response	3.1.e)	should the requirement for clearing snow off gun platforms be removed, given the new approach to helicopter control in some areas, e.g., Coquihalla	consider in conjunction with recommendation to move to LAS - differences such as these could be better reflected;	Bear Pass has a Howitzer station all other are no longer in commission. But leave for now and change next round.	Potential B item.
8 - Emergency Maintenance	7-810	Bailey and Acrow Emergency Installation	2.2	change to read: all services for this maintenance specifcation are Quantified	fix (formating consistency)	Fixed with rewrite	Completed.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
8 - Emergency Maintenance	7-810	Bailey and Acrow Emergency Installation		do we want the Contractor to have bailey and acrow bridge parts inventory in stock?	for consideration	From discussion with regions it would appear that it comes down to a decision between District staff and the Contractor if to stock parts based on local needs and response times. Not all Districts ask for stockpiling.Leave as arranged by District.	Completed.
7 - Emergency Maintenance	7-810	Bailey and Acrow Emergency Installation		This is listed as a quantified activity, yet there is no item or price in Schedule 5; in practice all this is paid as additional except the for stockpiling of the components;	for review;	See above decision. Consider completed.	Completed.
7 - Emergency Maintenance	7-810	Bailey and Acrow Emergency Installation		In practice, the installation is paid as Additional work; we should state that as Note;	for consideration	See Note 2 to address this issue.	Completed.
8 - Highway Condition Assessment and Reporting	8-830	Highway Inspection		Difficult to get complete inspections. Is a total annual inspection necessary?	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
8 - Highway Condition Assessment and Reporting	8-830	Highway Inspection		Reporting of inspections needs improvement: there is a need for uniformity of inspection reporting; format of inspection and amount of information provided; and possibly a link to inventory systems.	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
8 - Highway Condition Assessment and Reporting	8-830	Highway Inspection		Bridge staff would wont all numbered structures inspected annually with a link to BMIS if possible and practical.	Raised during regional reviews.	Decision was to leave for next round.	Potential B item.
8 - Inspection	8-840	Chapter name		Inspection and patrol are separate and distinct activities; why is does the chapter title only refer to inspection; why not inspection and patrol	for consideration	Chapter 8 title has changed during rewrite.	Completed.
8 - Inspection	8-840	Highway Patrol		states 'when temperature are fluctuating between freezing and thawing'; did we mean in a forecasted event situation? Q came from M.Adlam in re to Lepage case	for consideration	Addressed during rewrite.	Completed.
8 - Inspection	8-840	Highway Patrol	3.1.1.a.ii.	defines patrol response times as: at all times, and winter patrols (during snowfall); what about when freezing conditions are present, or when a storm is forecast? Should we expand to include those conditons? Industry and M.Adlam have also indicated that this is being interpreted by the courts as meaning that the higher patrol frequency is required when freezing temperatures are present or forecast. One option proposed is to clearly identify summer and winter periods and state that the increased winter patrol frequencies would be required during the period of 'winter' and snow, ice, frost or freezing rain are present or anticipated;	for consideration	Addressed during rewrite.	Completed.
8 - Inspection	8-840	Highway Patrol	3.1.1.a.ii.	it has been suggested that an addiitional frequency be added for 'considerable avalanche hazard' - 1 hr on Class A, 2 hrs on Class B, 4 hrs on Class C, 6 hrs on Class D and 9 hrs on Class E;	for consideration	New item included during rewrite (3.1 h))	Completed.
8 - Inspection	8-840	Highway Patrol	3.1.1a)ii)	is patrol frequency on Class E highways realistic; it is quite high, considering that these are defined as 'irregularly' maintained roads	for consideration	Retain as is. Highway Snow Removal 3-300 requires Maximum Allowable on Class E being 25.0 cm.	Completed.
8 - Inspection	8-840	Highway Patrol		is there an opportunity to reduce patrol cycles to reduce greenhouse gas emissions, e.g., rely on cameras, weather stations, etc. to monitor conditions	for consideration	Not realistic. Patrols are an essential safety measure for travelling public and not all areas have the necessary technology/ powersources/etc. Leave cycles as stated.	Completed.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
8 - Inspection	8-850	Highway Inspection		if we don't expect the contractor to inspect every inventory item, and to record the results of such inspections, but that is what the spec says; we should specify what we do expect	for consideration	See inspection issues noted above.	Completed.
9 - Definitions				Ensure all defined terms are capitalized and that all capitalized terms are defined	for consideration	Undertaken and completed.	Completed.
9 - Definitions		Black Ice		industry and M.Adlam propose a different definition as follows: 'a layer of ice on a paved surface that is difficult to see'	for consideration	Definition changed along lines proposed.	Completed.
10 - Definitions		Class E Highway		irregularly maintained' is misleading when you look at response times in winter ; consider revising definition	for consideration	Definition changed to read periodically	Completed.
9 - Definitions		Compacted		should we review?	for consideration	Discussed but leave for now.	Potential B item.
9 - Definitions		Danger Tree		is there a need to fine-tune?	for consideration	Discussed but leave for now.	Potential B item.
9 - Definitions		Drainage appliance		it has been suggested that Drainage appliance needs to be defined; the following definition has been suggested: undergroud drainage facility including manholes, catch basins, inlets and outfalls, drain pipes, french drains and perforated drains, flumes, culverts less than 3 metres, box culverts	for consideration	Included in definitions along the lines of wording suggested.	Completed.
9 - Definitions		Emergency Site		is there a need to fine-tune?	for consideration	Discussed but leave for now.	Potential B item.
		Slippery		industry and M.Adlam propose a different definition as follows: 'any road condition which causes a substantial increase in normal dry surface stopping distances as a result of buildup of frost, ice, slush or snow'	for consideration	Agreed to proposed change using similar wording.	Completed.
10 - Quantified Maintenance Services				Inconsistent application/interpretation of term "isolated areas"? - Isolated areas were intended only where there is a requirement to move equipment and materials by barge/ferry; not 'isolated' areas of work	clarify and/or change term to 'outer islands' which is a term already used for some activities	Not addressed at this time.	Potential B item.
New specs		Sign bridges		none currently; should we have one to clearly outline responsibilities, or can it be included in an existing spec?	for consideration	Given the number of items and the nature of the structure and its functionality it is better to establish a new Spec. for new round.	Potential B item.
New specs		Ungulate guards		none currently; should we have one to clearly outline responsibilities, or can it be included in an existing spec, or should it be a LAS?	for consideration	Given the nature and limited application of the asset it is better treated as a LAS in the next round.	Potential B item.
New specs		Exclusion fencing		new spec for standard construction developed by Len Sielecki in December 09; should we reflect this in a new spec for maintenance, or include in existing fence maint spec?	for consideration	Given the type of fencing involved and the type of inspection , maintenance and repair it is better treated with a new Spec. or LAS in the next round.	Potential B item.
New specs		Weigh scales		only responsibilities are litter pickup and snow removal; MC not responsible for washrooms; also consider that the requirements may be different depending on the facility (we have LAS for JUVIS type sites);	for consideration; or ensure responsibilities clear in rest area/facilities;snow removal and litter specs;	Could not be included during rewrite but should be considered in next round.	Potential B item.
New specs		Horizontal drains		Currently, only SA10 has a LAS that describes the maintenance requirements for horizontal drains; some areas in the northern region are indicating these drains are not being maintained; perhaps there needs to be a spec for this; or more LAS;	for consideration	This is an enforcement/management issue not a Spec. issue. These drains should be covered under 2-260 Drainage Appliances.	Completed.
New specs		Work id		currently no clear requirement in the contract that we can point to; it is impllied only and difficult to write an NCR against it	for consideration	Addressed under Inspections noted above.	Completed.
New specs		Reporting requirements		none currently, should we have one to clearly outline responsibilities?	for consideration	A new Spec. is required to capture the reporting requirements expected from the Contractor.	Potential B item.

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Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
New specs		Stakeholder relations		none currently, should we have one to clearly outline responsibilities?	for consideration	A new Spec. was drafted (8-870) during the rewrite but decision to hold for next round was made.	Potential B item.
New specs		Salt shed maintenance		none currently; should we have one to clearly outline responsibilities?	for consideration	This should be addressed under the Contract language what the mInistry operation/environmental requirements are for maintaing these sheds.	Potential B item.
General		term 'traffic control' is not defined, should not be capitalized			check all specs	Addressed and corrected during rewrite.	Completed.
General					compare specs to specs used for concessions and to Ontario - are there models of specs that are closer to end-product	Not addressed as part of rewrite. A next round item.	Potential B item.
General					review use of credits vs. no credits; some inconsistencies and/or omissions (see seperate sheet in workbook)	Not addressed as part of rewrite. A next round item.	Potential B item.
General					consult with Rehab to see if they have suggestions/recommendations to services that might improve overall condition of infrastructure	Not addressed as part of rewrite. A next round item.	Potential B item.
General					consult with Hwy Engineering re recommended changes due to climate change	Not addressed as part of rewrite. A next round item.	Potential B item.
General					ensure consistency in how we describe General performance spec and Detailed performance spec	Addressed and corrected during rewrite.	Complete.
General					consult with AG - litigation section for recommendations on improvements to language that might be creating issues from their perspective; e.g., response times for quantified (does it make sense to have them when we know there are not enough quantities to do all work);	Discussed but beyond the rewrite process.	Potential B item.
General					can we better describe expectation for winter	Discussed in the context of certain extra performance for major routes but none in the rewrite.	Potential B item.
General					can we better describe expectations for summer routine	Not addressed as part of rewrite. A next round item.	Potential B item.

Recommendations from Industry

Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
3 - Winter Maintenance		intro to all specs in Chapter 3?		it has been suggested by industry and M.Adlam that we introduce an 'omnibus clause' to mitigate the contractors' and province's risk, e.g., 'The contractor will provide Maintenance Services to the Province, on or in respect of all Highways within the Service Area, in accordance with ther terms and conditions of this Agreement, however, it is understood that it will likely be impossible for the Contractor to conform with the Maintenance Specifications all the time and Contractor will not be considered to be non-conforming during ususual circumstances, when the Contractor is making its best efforts to conform with the Maintenance Specifications and when the Maintenance Contractor remedies the non-conformance as soon as possible	for consideration; it may also make more sense to include in the Agreement rather than the Specs; should review Ontario's language also	Review and report on M. Adlam letter representing the industry was undertaken and prepared including review by MOT staff. Decision that this proposal was not acceptable due to it limiting the responsibility of the contractor and passing risk back to the province.	Completed.
3 - Winter Maintenance	3-300	Snow removal		where is snow measured to determine if Maximum Allowable Accumulation has been reached?; issue for the ministry (consistency in administration) and raised by industry and M.Adlam as issue in litigation	consider clarifying	Addressed and included in rewrite and is now in the Definitions as being accumulated snow allowable on the travelled lanes. Not a perfect solution but the best reached during reviews with staff.	Completed.
3 - Winter Maintenance	3-300	Snow removal	3.1.1a)ii)	industry and M.Adlam are proposing this clause be re-written as follows: 'Notwithstanding the foregoing Maximum Allowable Accumulation, plowing of slush and plowing of broken compact snow that appears particularly hazardous to the Contractor must be conducted within the following timeframes from the end of the last measurable snowfall.'	for consideration	Discussed and agreed that this was not the time to make changes other than minor word changes..	Potential B item.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.a)i)	industry and M.Adlam are suggesting replacing the word 'minimize' with 'reduce';	for consideration - however, this may be perceived as a reduction in the level of service	Was reviewed by MOT and decision was to leave as written.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.a)ii)	states that the contractor must use RWIS; contradicts section 1.04 of Schedule 20 (not obliged to use info from RWIS); note that not all SA's have RWIS stations; industry and M.Adlam suggest that we amend as follows: 'increasing monitoring of road temperatures and condition forecasts through RWIS where available at locations where RWIS data is relevant, ...	eliminate contradiction; consider proposed language	Proposed wording by industry was adopted , in part, and was included in revisions to Spec.	Completed.

Recommendations from Industry

Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.a)iii)	industry and M.Adlam suggested adding, at the end of the clause, the words 'as appropriate'	for consideration	Not accepted by Mot. Proposed wording makes little difference to response.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.b)	industry and M.Adlam suggested changes to this clause: 'when a non-forecast event occurs and when hazardous Slippery conditions are detected by or reported to the Contractor, immediately deploy resources to enhance (i.e., THEY PROPOSE REPLACING THE WORD 'RESTORE') surface traction by applying Winter Abrasive and/or chemicals AND DELETING THE REST OF THE CLAUSE (when hazardous Slippery conditions are detected by or reported to the Contractor);	for consideration - however, this may be perceived as a reduction in the level of service	This item has been debated numerous times during review and proposed wording such "improve" is currently in revised Spec. but needs to be reviewed by legal staff.	Potential B item.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.c)	industry and M.Adlam suggested changes to this clause: 'acquire and utilize Road Temperature and Condition (RTC) forecasts, where available and relevant, to determine if a Weather Event could develop that would reduce surface traction on the Highway surface; and, in advance of a forecasted event, respond by pre-treating the Highway surface with Winter Abrasives or anti-icing chemicals, as appropriate for both the location and the Weather Event;	for consideration; also addresses issue of contradiction with Sched.20	Accepted , in part, during review with revised wording now included in current draft.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.d)	industry and M.Adlam suggested changes to this clause: utilize RWIS data where available, at locations where it is relevant, to monitor existing and developing conditions in order to better time the application of Winter Abrasives or chemicals, as appropriate for the location and the Weather Event, in advance of a Weather Event;	for consideration; also addresses issue of contradiction with Sched.20	Accepted , in part, during review with revised wording now included in current draft.	Completed.

Recommendations from Industry

Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.e)	industry and M.Adlam suggested changes to this clause: utilize RWIS data, (DELETE 'if available' AND REPLACE WITH where available at locations where RWIS data is relevant, to determine if previous chemical application residuals are sufficient to maintain pre-weather event surface traction when a Weather Event is forecast, and to determine if applications of additional anti-icing or De-icing Chemicals are required to maintain surface traction; and	for consideration; also addresses issue of contradiction with Sched.20	Accepted , in part, during review with revised wording now included in current draft.	Completed.
3 - Winter Maintenance	3-310	Winter Abrasives	3.1.1.b)	industry and M.Adlam suggested changes to this clause: DELETE 'restore' AND REPLACE WITH 'enhance' traction within the response times, from the time the deficiency was detected by or reported to the Contractor, as specified in the following table	for consideration - however, this may be perceived as a reduction in the level of service	Same decision as noted above. New wording "improve" is currently in the revised Spec. but requires legal staff input.	Potential B item.
3 - Winter Maintenance	3-310	Winter Abrasives	3.3	industry and M.Adlam suggested changes to this clause: ADD 'not' AFTER 'The contractor must' AND use materials and chemicals (DELETE 'used in' AND REPLACE WITH 'that are not identified for snow and ice control DELETE 'from' AND REPLACE WITH 'in' the Recognized Products Lists or as accepted in writing by the Province for use on Highways; the intent here is to make it clear that the contractor does not have to use materials all the time, but when materials are used, they must be on the RPL.	for consideration; also consider whether we need to make that distinction in other specs…	Not accepted by Mot. Leave as written.	Completed.
3 - Winter Maintenance	3-320	Roadside Snow and Ice Control	3.1.1.a)	industry and M.Adlam suggested changes to this clause: complete the clearing of snow and ice on Highways, and DELETE 'restore' AND REPLACE WITH 'enhance' traction on pedestrian facilities	for consideration - however, this may be perceived as a reduction in the level of service	As noted above, revised Spec. uses the term "improve" but will require legal staff input.	Potential B item.

Recommendations from Industry

Chapter	Section	Name	Sub-Section	Issue	Comments/Recommendation	Decision	Status
4 - Roadside Maintenance	4-360	Roadside Brushing and Danger Tree Removal	3.2.f)	industry and M.Adlam suggested that there are issues with the currentl language on Danger Trees; it is being interpreted by the courts that the contractor must assess all trees that could be construed as 'danger trees'; their proposal is to limit the contractor's responsibility to removing trees the contractor has received notice are Danger Trees and thereby removing the responsibility to identify and assess trees/having someone on staff trained to assess trees	for consideration, however, we need to be clear who has the responsibility to identify and assess trees; perhaps a clearer definition of Danger Tree would address the problems; refer to letter from M.Adlam dated November 15 for details of proposed language change	No. Decision by MOT that it should remain a resposibilty of the Contractor to have the assessent done by a qulified person.	Completed.
8 - Inspection	8-840	Highway Patrol		states 'when temperature are fluctuating between freezing and thawing'; did we mean in a forecasted event situation? Q came from M.Adlam in re to Lepage case	for consideration	Addressed during rewrite.	Completed.
8 - Inspection	8-840	Highway Patrol	3.1.1.a.ii.	defines patrol response times as: at all times, and winter patrols (during snowfall); what about when freezing conditions are present, or when a storm is forecast? Should we expand to include those conditons? Industry and M.Adlam have also indicated that this is being interpreted by the courts as meaning that the higher patrol frequency is required when freezing temperatures are present or forecast. One option proposed is to clearly identify summer and winter periods and state that the increased winter patrol frequencies would be required during the period of 'winter' and snow, ice, frost or freezing rain are present or anticipated;	for consideration	Addressed during rewrite.	Completed.
9 - Definitions		Black Ice		industry and M.Adlam propose a different definition as follows: 'a layer of ice on a paved surface that is difficult to see'	for consideration	Definition changed along lines proposed.	Completed.
9 - Definitions		Slippery		industry and M.Adlam propose a different definition as follows: 'any road condition which causes a substantial increase in normal dry surface stopping distances as a result of buildup of frost, ice, slush or snow'	for consideration	Agreed to proposed change using similar wording.	Completed.