

From: Livolsi, Patrick C TRAN:EX
Sent: Thursday, December 20, 2012 11:26 AM
To: Drummond, Derek M TRAN:EX
Cc: Dawson, Garry TIC:EX; Halwani, Lina TRAN:EX; Chang, Joyce TIC:EX; Docherty, Stephen TIC:EX
Subject: Re: Ice build up on Port Mann Bridge

Garry, Joyce

Executive will definitely want to have a plan laid out as to the process and plans to investigate this event and work on future mitigation strategies.

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Please include our bridge engineering group in this review process. Sharing of knowledge and the power of a team effort should hopefully get the creative juices flowing!

Thanks

Patrick

On 2012-12-20, at 10:12 AM, "Drummond, Derek M TRAN:EX"

<Derek.Drummond@gov.bc.ca> wrote:

We understood that there was a meeting with the design engineers and contractor to start reviewing potential solutions and

undertake a forensic investigation of incident. If there is not a meeting set, it would likely be a good idea.

Thanks,

Derek Drummond

Assistant Regional Director

South Coast Region

Ministry of Transportation & Infrastructure

7818 Sixth Street

Burnaby BC V3N 4N8

Office: 604 660-3889

Cellular:

S17

From: Garry Dawson [mailto:gdawson@ticorp.ca]

Sent: Thursday, December 20, 2012 10:09 AM

To: Halwani, Lina TRAN:EX; Chang, Joyce TIC:EX; Docherty, Stephen TIC:EX

Cc: Livolsi, Patrick C TRAN:EX; Drummond, Derek M TRAN:EX

Subject: RE: Ice build up on Port Mann Bridge

We are not aware of a specific meeting but are in contact with the contractor. As noted in my other email, Stephen Docherty is

assuming the role of point person for our office and will coordinate accordingly.

From: Halwani, Lina TRAN:EX [mailto:Lina.Halwani@gov.bc.ca]

Sent: Thursday, December 20, 2012 9:04 AM

To: Joyce Chang; Garry Dawson

Cc: Livolsi, Patrick C TRAN:EX; Drummond, Derek M TRAN:EX

Subject: Ice build up on Port Mann Bridge

I understand that there is a meeting with the bridge design engineers today to discuss the ice build-up issue and mitigation

measures. We are offering to send a Regional Bridge engineers to contribute to the discussion and provide technical expertise and assistance. Please let me know the details of this meeting and we will gladly secure attendance.

Regards,

Lina Halwani, P. Eng.

Regional Manager, Engineering

Phone: 660 - 8217

Fax: 660 - 0350

email: lina.halwani@gov.bc.ca

Derkson, Debra TRAN:EX

From: Chang, Joyce TIC:EX
Sent: Friday, December 21, 2012 12:05 PM
To: Atkins, Brian L TRAN:EX; Bhatti, Ashok TRAN:EX; Drummond, Derek M TRAN:EX; Livolsi, Patrick C TRAN:EX; Edmunds, Kurt TIC:EX; Neufeld, Duane TIC:EX
Subject: Fw: CSR Script - Dec 19 Bridge Closure
Attachments: CSR Script - Dec 19 Bridge Closure - V1.docx

Fyi, if we have any calls for claims. The tolling call center will handle and we have insurance adjuster to handle any specific issues or concerns.

Thanks, Joyce

From: Greg Johnson
Sent: Thursday, December 20, 2012 10:54 AM
To: Joyce Chang; Garry Dawson; Gerry Fleming; Mike Proudfoot
Subject: FW: CSR Script - Dec 19 Bridge Closure

FYI

From: Greg Johnson
Sent: Thursday, December 20, 2012 10:49 AM
To: Mahrokh Arefi; Christian Copin (christian.copin@tc-flow.com); Bob Wickenden (bob.wickenden@tc-flow.com)
Cc: Lea Howard (lea.howard@tc-flow.com); Richard.lengrand@tc-flow.com; Sofia Morales
Subject: CSR Script - Dec 19 Bridge Closure

Here is scripting for CSRs when dealing with customers affected by falling ice or the Dec 19 bridge closure.

Note – we are not charging tolls for the period of 10AM – 6PM.

TI Corp will be working with ICBC to pay for drivers' insurance deductibles. However, there are some messaging clauses around private insurers and drivers without comprehensive insurance that are included in the notes.

Greg Johnson
Manager, Communications
Transportation Investment Corporation
Direct: 778-783-1220

CSR Key Messages

December 19 Port Mann Bridge closure

Key Messages:

- The Port Mann Bridge was closed for a period of time Wednesday afternoon in the interest of public safety.
- Public safety is a priority for TReO, and for Transportation Investment Corporation.
- We sincerely regret the inconvenience and damage drivers may have experienced.

Toll waiver

All trips over the Port Mann Bridge between 10 a.m. and 6 p.m. will not be tolled.

If you have a registered account we will remove the toll from your invoice. Unregistered drivers will not be billed for trips during this time frame either.

If you have already paid your toll, we will credit your account.

Damaged vehicles

Public safety and customer service are our primary concerns and we regret the inconvenience and damage that drivers have experienced.

In extenuating circumstances like this, providing superior customer service means paying for drivers' insurance deductibles.

If you have a damage claim to submit, the best thing you can do is contact your insurance provider.

TI Corp and TReO will be working with ICBC and other insurance providers to resolve any claims in an accurate and timely manner.

Questions:

I use a private insurance company and need more information:

Our lead on insurance claims is Stacey Rose. You can forward any specific inquiries to her. Contact:

Stacey R. Rose, CIP, CRM
Consultant, Claims and Risk Management
Transportation Investment Corporation
Direct: (778) 228-7673
Email: srose@ticorp.ca

I demand to speak to someone about this situation.

I can connect you with a supervisor.

If you have a damage claim to submit, the best thing you can do is contact your insurance provider.

TI Corp and TReO will be working with ICBC and other insurance providers to resolve any claims in an accurate and timely manner.

Will TI Corp be paying for drivers' deductibles?

Public safety and customer service are our primary concerns.

TI Corp will be working with ICBC to cover drivers' deductibles.

I don't have comprehensive insurance. Will I still get covered for the damage I've received?

In certain situations, TI Corp will be working with customers on a case-by-case basis.

The first thing you should do is get in touch with ICBC or your insurance provider. TI Corp and TReO will be working with ICBC and other insurance providers to resolve any claims in an accurate and timely manner.

From: Livolsi, Patrick C TRAN:EX
Sent: Thursday, January 03, 2013 07:52 AM Pacific Standard Time
To: Parkes, Norm E TRAN:EX
Cc: Duncan, Dave TRAN:EX; Knight, Jeff J GCPE:EX; Bhatti, Ashok TRAN:EX; Bicknell, Liz M GCPE:EX; Drummond, Derek M TRAN:EX; Proudfoot, Mike TIC:EX; Chang, Joyce TIC:EX; Edmunds, Kurt TIC:EX; Logan, Max TIC:EX
Subject: Re: MVI's @ Port Mann Bridge

Norm

Ashok has been to the bridge and crossed going westbound - two lanes were blocked due to several smaller MVI's and vehicles were in process of being removed. Traffic was backed to 156st going westbound however it was moving slowly forward. Eastbound lanes are now all open again after there were several smaller incidents as well earlier.

DriveBC updated to reflect delays longer than 30 minutes.

The roads leading to the bridge were in good condition with no issues reported. It appears the bridge deck was likely the primary icy location. Talking to the rcmp, they indicated that icy roads with high speed were likely cause. District working with ticorp to obtain mc records of all salting activity completed on bridge deck in overnight period to ascertain why the deck was icy this morning.

Thanks

Patrick

On 2013-01-03, at 6:44 AM, "Livolsi, Patrick C TRAN:EX" <Patrick.Livolsi@gov.bc.ca> wrote:

Norm

There have been reports of several mvi's on the port Mann bridge involving multiple vehicles due to icy road conditions. No reports of any serious injuries but there are lane closures east and westbound and queues are building for each direction. Mc is brining and applying salt however the congestion is now slowing the process down.

News reports are already indicating to avoid the bridge due to the delays. DriveBC messaging is up indicating some lane closures and will be updated to reflect current lane closures shortly. Cms's along the corridor are all updated To reflect icy roads and lane closures.

Ashok is heading out and should have further update shortly.

Thanks

Patrick

From: Bhatti, Ashok TRAN:EX
Sent: Thursday, January 3, 2013 11:00 AM
To: Livolsi, Patrick C TRAN:EX
Cc: Soloducha, Danielle TRAN:EX; 'Edmunds, Kurt D TRAN:EX'; Neufeld, Duane TIC:EX; Kwan, Joseph TRAN:EX; Chang, Joyce TIC:EX; Atkins, Brian L TRAN:EX
Subject: RE: PMB Incident(s) Summary

Patrick, as requested here is the information I received from our conference call:

1. **Vehicles used for brining:** Mainroad uses standard brine trucks equipped with large brine tanks and spray bars. This equipment is similar to other brine trucks used throughout the lower mainland. All trucks are required to be calibrated for optimum spray rates. All equipment was functional and tested as of the last application of brine on Jan 2, 2012 at 4:00am.
2. **Number of runs applied:** Mainroad applies two runs in each direction (EB/WB). Each truck can do a 3 lane cover and 2 runs will cover the entire bridge deck.
3. **Total quantity of brine or salt applied:** Cape Horn Interchange to 200th Street – 8400 litres. This quantity would be considered a typical application for this run.
4. **How they verify brine meets specifications:** All brine mixtures (which is a combination of water and salt) are tested for salinity. Tests should yield results that run in the 23% ranges for sodium (salt) content. Mainroad has provided a copy of their production report for the brine mixture used and it meets this performance specification.
5. **How many patrols were out, timelines, and how they checked for icy conditions:** Patrols were performed at the following intervals: 9:45pm, 11:30pm, 12:53am, 1:15am, 3:00am, 5:00am. The last patrol at 5:00am yielded no observations of any icy conditions on the deck. The fog "rolled" in at our first report of accidents was around 5:35am. Patrols are visual observations only unless concerns are noted in which case Mainroad will get out and observe the actual deck conditions when safe to do so.

Further questions:

1. **Why do we use brine instead of salt?** Studies show that Brine wont freeze until it his -12. This makes it an optimal application for de-icing in the Lower Mainland where we traditional have temperatures that are around the freezing mark. Brine is also better absorbed into the asphalt and will remain on the surface providing a proactive response. Salt crystals (dry) often blow off the road surface and do not retain as good as brine. Regular abrasives are also not as practical as the Lower Mainland is often dealing with icy conditions (not snow) so traction needs to be restored immediately which abrasives do not provide.
2. **What measures are we taking moving forward?**
 - a. Mainroad will be looking to install some instrumentation on the bridge deck to provide additional information of the pavement surface. We have similar instrumentation on the Lions Gate Bridge (pavement sensors) that provide temperature conditions through sensors placed right on the deck surface.
 - b. Mainroad will providing more applications of brine to ensure the deck surface is providing the necessary traction. When fog is noted, Mainroad will also increase the use of salt crystal (in addition to the Brine that was added earlier) to counteract any ice that may form from moisture in the fog.
 - c. Mainroad is reviewing logs from all other major structures (Alex Fraser Bridge, Pitt River Bridge, Iron Workers Memorial Bridge, etc) to ensure we didn't have similar problems with the use of brine. If there were no issues, then we know we are dealing with a micro climate issue at the Port Mann Bridge and can focus on better forecasting and application frequencies versus exploring the composition of the brine itself.
 - d. Mainroad will also immediately notify the appropriate TI Corp/Ministry personnel when they find any issues in dealing with future conditions along the entire corridor.

Let me know if you require more information.

Thank you,

Ashok Bhatti - B.Comm., MBA
District Operations Manager SA06
Lower Mainland District, Ministry of Transportation & Infrastructure

From: Livolsi, Patrick C TRAN:EX
Sent: Thursday, January 3, 2013 8:32 AM
To: Bhatti, Ashok TRAN:EX
Subject: Re: MVI's @ Port Mann Bridge

Thanks Ashok. Could you please get more details in terms of vehicles used for brining, number of runs applied, total quantity of brine or salt applied and how they verify brine meets specifications. Also should get details on how many patrols were out, timelines and how they checked for icy conditions.

Thanks

Patrick

From: Baskin, Kevin TRAN:EX
Sent: Thursday, December 20, 2012 12:27 PM
To: Dawson, Garry TIC:EX
Cc: Farnden, Gary TRAN:EX; Sturrock, Ian F TRAN:EX
Subject: Canadian Highway Bridge Design Code
Attachments: S6-06 CHBDC Clause 1.4.2.1 Safety.pdf; S6-06 CHBDC Clauses on Ice Accretion.pdf

Follow Up Flag: Follow up
Flag Status: Completed

Garry,

The Canadian Highway Bridge Design Code (S6-06 CHBDC) requires that bridges be designed for ice accretion (ice build up) loading. The Vancouver geographic area is a zone of "heavy" ice accretion in the code. The code does not have specific clauses for designing to prevent ice build up from falling on to vehicles. The code does state that the primary concern shall be the safety of the public. (Clause 1.4.2.1).

In addition to these requirements the contract also required specifically that 'Cables and structure shall be designed to avoid ice build-up from falling into traffic'.

I have attached excerpts from the code and the commentary for the code.

Kevin Baskin, P.Eng.
Chief Bridge Engineer
Ministry of Transportation and Infrastructure
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Victoria, British Columbia, V8W 9T5
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Page 10 to/à Page 13

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