

**TRANSPORTATION ASSOCIATION OF CANADA
STRUCTURES STANDING COMMITTEE**

**2011 SPRING MEETING
MINUTES OF MEETING**

Location: Richelieu Room, Crown Plaza Hotel, Ottawa, ON

Date: April 16, 2011

Present:	Brian Wood	Chair	Stantec Consulting Ltd. - Winnipeg
	Darrell Evans	Vice Chair	PEI Dept. of Transportation & Infrastructure Renewal
	Ruth Eden	Secretary	Manitoba Infrastructure and Transportation
	Robert VanGinkel	Past Chair	Tetra Tech
	Shane Finlay		Armtec
	Dino Bagnariol		Ontario Ministry of Transportation
	Ted Brumfitt		IBI Group
	Jianping Jiang		MMM Group Limited - Vancouver
	Virendra (Vinni) Sahni		PWGSC
	David Penny		Corrugated Steel Pipe Institute (CSPI)
	Michael Paulsen		Associated Engineering Group Ltd.
	Chris Haines		Dillon Consulting Limited - London
	Reed Ellis		Stantec Consulting Ltd. - Edmonton
	John Alexander		Alberta Transportation
	Husham Almansour		NRC - IRC
	Robert Simpson		New Brunswick Dept. of Transportation
	Eric Levesque		Structal - Ponts
	Doug Power		Newfoundland Transportation and Works
	Chris Barnes		Dalhousie University
	Jadwiga Kroman		City of Calgary
	Gérard DesGagné		Ministère des Transports du Quebec
	Sylvain Montminy		Delcan
	Dale Gaston		Atlantic Industries Ltd.
	Phil Carroll		Armtec
	Randy McDonald		Armtec
	Brian Dorcas		exp
	Marc Sarrazin		City of Montreal
	Alfred Wong		Canadian Institute of Steel Construction
	Zichau Wu		AECOM
	Jay Rieger		Transport Canada
	Vidyadhar Limaye		MacDonnell Group Consulting Limited
	Shiraz Kanji		City of Edmonton
	Howard Yea		Saskatchewan Ministry of Highways and Infrastructure

Distribution: TAC Secretariat
Structure Standing Committee Members

Recorded By: Ruth Eden

2011S-1 WELCOME AND INTRODUCTIONS

- Brian Wood welcomed everyone and thanked everyone for attending.
- Brian quickly reviewed the agenda for the day.
- Introductions of all in attendance.

2011S-2 PREVIOUS MINUTES

- Minutes of the 2010 Fall Meeting held in Halifax were moved to be adopted by Vinni Sahni, seconded by Ted Brumfitt. Minutes were adopted as circulated by all in attendance.

2011S-3 COMMITTEE MEMBERSHIP AND CHANGES/CONTACT LIST

- Contact list was distributed for review and verification by all attendees.
- Brad Niernick sent regrets that he could not be in attendance due to flooding in Manitoba.
- John Fussell has retired from the committee. Michael Paulson is now representing Associated Engineering.
- Possible future losses in committee membership: Vinni Sahni and Ted Brumfitt

2011S-4 TAC STAFF CHANGES

- Stacy Keetch is TAC Committee Project Manager for the Structures Standing Committee.
- SSC Committee Executive:
 - Past President: Robert Van Ginkel
 - Chair: Brian Wood
 - Vice-Chair: Darrell Evans
 - Secretary: Ruth Eden

2011S-5 BUSINESS ARISING FROM PREVIOUS MINUTES

SHM – distribution of survey by Ruth Eden

- Survey was distributed and will also be sent out electronically.
- Responses back to Ruth Eden, Secretary of SSC.
- Summary will be presented prior to TAC Fall Meeting or at the Fall Meeting.

Bridge Preservation Budgets – update: Reed Ellis

- Issues discussed previously
 - What structures should be included: bridges only or bridges and culverts
 - Maintenance, repair, rehabilitation, replacement - different pots of money and different ways of classifying the work between different jurisdictions. This may cause issues when analyzing the information submitted in response to the survey.
 - Some jurisdictions may not have all of the data readily available.
- Annual expenditures on Structures
 - Additional work is being done in US – state agencies are also interested in this information gathered from Canadian jurisdictions.
 - Some information available from Europe.
- Reed Ellis recommended that:
 - We proceed, and
 - Circulate the survey to everyone for responses.
- Shiraz Kanji raised the concern with some projects are extremely high in cost and how do we include these projects or should they even be included.
- Ruth Eden suggested that the “one off “ projects be removed from the averaging so the results are not skewed by the large projects.
- Shiraz Kanji commented that some documents recommend 2% of asset value for preservation.
- Brian Wood discussed that Manitoba had completed a gap analysis about 7 years ago and noted that 0.5% of asset value was a recommended target for funding for preservation and maintenance in the TAC Guide to Bridge Management. This percentage does not include major rehabilitation or replacement.
- Vinni Sahni commented that all information be requested and it’s up to the jurisdictions to determine if they want to share the information.
- Dino Bagnariol recommended that there needs to be clear definitions of the terms so that the jurisdictions are all reporting the same information.
- It was decided to circulate this survey to the jurisdictions through the Secretary of SSC.
- It was also agreed that the information collected from this survey would be kept confidential within the sub-committee membership and only those jurisdictions that responded (i.e. not full SSC membership).

Guide to Bridge Traffic and Combination Barriers seminar/workshop series: Jadwiga Kroman and Shiraz Kanji

- Brian Wood stated that it had been agreed to use MMM's document as the training document.
- At the current time, there is not enough funding committed to the project. \$15k is required and only have \$5k has been committed.
- City of Calgary, PEI and Manitoba have committed to fund the remaining balance with Structal also contributing \$1 K.

Bridge Sustainability – working group update: Jadwiga Kroman, Chris Haines and Reed Ellis

- The working group distributed a list of ideas for sustainability in bridges. Jadwiga Kroman discussed the list and noted that the 3 pillars of sustainability are: social, economic and environmental impacts.
- It was agreed that the SSC can use this work to develop a TOR to engage a consultant. This list could be used by a consultant as the Table of Contents for a "Guideline on Bridge Sustainability".
- Chris Haines provided an update on TAC's "Green Guide for Roads". The project committee has received proposals from four consultants and intends to have a draft guide this fall. Our proposed "Guideline on Bridge Sustainability" would reference this document and both guides would be compatible. Chris also reviewed "Model Framework for Assessment of State, Performance and Management of Canada's Core Public Infrastructure" (May 2009) by NRC and the National Roundtable on Sustainable Infrastructure. This document reinforces the 3 pillars of sustainability: social, economic and environmental impacts.
- Reed Ellis updated the committee on work being done in Europe and by the Transportation Research Board.
- Suggestions for additions to the list of ideas presented: new materials, quality control/quality assurance, value evaluation/engineering, focus on aesthetics, preservation of historical structures, section of inspection and evaluation, preservation/rehabilitation activities are practicing sustainability.
- Motion: submit a proposal application to Chief Engineer's Council to engage a consultant to develop a "Guideline on Bridge Sustainability"

Moved : Robert van Ginkel

Seconded: Jay Rieger

Approved.

White paper proposal update: Darrell Evans

- Darrell Evans does not think that this is a viable initiative now that the sustainability issue is being pursued as a project through TAC.

2011S-6 CHBDC UPDATE

- Darrell Evans informed everyone that the Technical Committee met in early March to discuss the recently issued Amendment (June 2010).
- Future amendments are expected in 2012 and 2013.
- New version of the CHBDC is expected to be issued in 2014. Major re-write of the following sections is expected:
 - Section 4 – Seismic
 - Section 5 – Methods of Analysis
 - Section 12 – Barriers (move to a test level instead of a performance level)
 - Section 15 – Moveable Bridges
 - Section 17 (New) – Aluminum

2011S-7 2011 BRIDGELIFE CONFERENCE

- Darrell Evans noted that it was a worthwhile event with good cross-section of representation and good discussion on current state of the art.
- Reed Ellis agreed with Darrell's comments. Good presentations.
- Shiraz Kanji noted that there was good representation and an apparent willingness for an annual conference.

2011S-8 REVIEW OF SSC MANUALS /GUIDELINES

- Brian discussed SSC Manuals and Guidelines that are currently available for purchase from TAC, or in the TAC library:
 - "Bridge Decks" 1997
 - "Bridge Barriers" 1998
 - Guide to Bridge Hydraulics – Second Edition 2001

- Guide to Bridge Management 2004
 - 2 chapters of the guide were removed and are available on a private site on TAC website to the jurisdictions that participated in the development of this Guide
- Compilation of Prefabricated Bridge Components 2006 (Ruth Eden to confirm as this document was initiated by Manitoba)
- Guide to Bridge Repair and Rehabilitation 2006
- Guide to Bridge Traffic and Combination Barriers 2010
- Structural Concrete Deck Protection Systems 2010
- TAC Geometric Guidelines
- Note that there should be one on “Bridge Expansion Joints”, will be investigated to determine if the document is available
- SSC Surveys
 - Bridge Inspection Training 2008
 - Bridge Inspection Practices 2008
 - Deck Durability Survey Combined Jurisdictions 2008
 - Construction Inspection Practices 2009

2011S-9 PRESENTATION - INCORPORATING RISK AND CRITICALITY IN BRIDGE MANAGEMENT DECISION MAKING AND PROJECT PRIORITIZATION

- Reed Ellis gave a presentation on the current status of incorporating risk and criticality in bridge management decision making and project prioritization.

2011S-10 PRESENTATION – ASSET MANAGEMENT COMMITTEE

- Dino Bagnariol reported that the Asset Management Committee had met yesterday; however, the project is not as far along as had hoped due to reassignment of the chair.
- This committee is assembling a survey to distribute to owners of infrastructure to determine where the different jurisdictions are in relation to asset management. The survey will focus on a stepped approach model to asset management.
- The goal of the committee is to develop a guideline or document to assist owners with asset management.

2011S-11 PRESENTATIONS - RECENT STORM EVENTS

New Brunswick – Robert Simpson gave a presentation on “NBDOT Storm Damage Dec. 2010 to Jan 2011”

Newfoundland – Doug Power gave a presentation on “Effects from Hurricane Igor”

Manitoba – Ruth Eden gave a presentation on “2011 Spring Flood in Manitoba”

2011S-12 PRESENTATION – PEACE BRIDGE

- Jadwiga Kroman gave a presentation on the “Peace River Bridge”, a landmark pedestrian bridge in the City of Calgary. She discussed planning, design and construction aspects of the project.

2011S-13 UPDATE ON DRAFT “CSPI STRUCTURAL PLATE PERFORMANCE GUIDELINE”

- Phil Carroll gave an update on the draft “CSPI Structural Plate Performance Guideline”. He introduced other members of CSPI in attendance: Dave Penny, Shane Finlay and Dale Gaston.
- A copy of the draft manual was circulated around the room for a quick review by the attendees.
- Members of the SSC committee may offer to assist with a peer review of this document.

2011S-14 FALL CONFERENCE IN EDMONTON (September 11 to 14, 2011)

- Structural Papers/Posters
 - 34 abstracts were submitted for 12 slots. Darrell Evans reviewed all abstracts and accepted 13. Of the remaining 21: 3 were rejected, 10 didn't score high enough and 8 were included in the poster session (2 declined).
 - Shiraz Kanji suggested that the SSC request a morning and an afternoon session which will allow SSC Members to take the tours offered during the Fall Conference.
 - Brian Wood informed everyone that he had requested that the SSC poster session be longer to allow more time for review of the posters.
- SSC Tour of Red Deer Bridges – Maintenance
 - Red Deer bridges offer a unique opportunity to visit bridges that have been maintained properly. This was suggested as a tour opportunity for individuals by Brian Wood.

2011S-15 ROUND TABLE DISCUSSION – OPEN FORUM

- Brian Wood reviewed current initiatives of TAC: 2 task forces, working group on sustainability, volunteer projects, training on Guide to Bridge Barriers.
- Doug Power raised the issue of shrinkage reducing admixtures and high performance concrete and discussion by the committee followed. Shiraz Kanji requested that Daniel Cusson (presented at BridgeLife Conference) from NRC present at the next SSC meeting.
- Vidya Limaye offered to assist anyone in implementing a Structural Health Monitoring system.
- Chris Barnes discussed research completed on reinforcement cover measured in the field in new construction and the large implications on long-term performance if the cover is not attained. Shiraz Kanji discussed the quality assurance role during construction. In Quebec, an Engineer must certify that the bars are placed properly during construction. SSC also discussed quality control, quality assurance, pre-pour meeting, proper tying and charring, engineers on site during pour, post performance confirmation of concrete cover (example GPR survey) and possible penalty to the Contractor based on in situ reinforcement cover measurements.
- Alfred Wong from the Canadian Institute of Steel Constructors notified everyone that certification for Canadian bridge steel structure fabricators is now in place.
- Vinni Sahni raised the topic of the earthquake in Ottawa in early June. Federal government has a policy that after an earthquake of magnitude 5 or larger, all structures must be inspected as soon as possible after the earthquake. Federal government is considering producing a guide on what to look for after an earthquake. BC and TransLink are working on the inspection requirements following an earthquake of certain magnitude, including a pre-selection and retention process for consultants to undertake the inspections immediately after an earthquake. CalTrans has undertaken a substantial amount of work in this area and will be a resource to investigate. Quebec has a list of bridges to inspect after an earthquake exceeding a specific magnitude.
- JianPing Jiang asked the question: what is the optimal deck system for new construction and the best design criteria? Brian Wood referred JianPing to the SSC's 2008 Bridge Deck Durability Study, question 5. JianPing also stated that Expanded Polystyrene (EPS) embankments are being used extensively in BC; however, design criteria is not specified in CHBDC or Building Code (e.g. wind loading, seismic loading). Darrell Evans responded that MSE walls have not been included in CHBDC to date; however, the intent is to work towards including this in the design code.
- Shiraz Kanji asked how climate change would be incorporated into bridge design. It was noted that several studies are underway at the federal level to answer this question.
- Ruth Eden stated that in Manitoba, the average waiting time for Navigable Waters Act approval by Transport Canada is 2 to 4 years. All other jurisdictions (except MB and SK) indicated that their average waiting time is 4 to 9 months.

- Husham Almansour informed the SSC that upgrades in lab facilities now allow experiments at NRC to test blast resistance for concrete and also complete environmental testing on specimens for durability. NRC is also enhancing facilities for environmental testing for full-scale, half-scale and quarter-scale samples for durability. Research on use of innovative materials and technologies for concrete can now be undertaken along with testing for environmental durability.
- Jadwiga Kroman requested any information on blast loading for a tunnel being built at the airport. NRC offered to assist with the design loading and design requirements for this project.
- Howard Yea provided an update on metakaolin that was being used in SK to replace silica fume. Saskatchewan used metakaolin on 6 entire bridges and 1 deck with good results. Unfortunately, the supplier in southern Saskatchewan went bankrupt. Howard informed everyone that Saskatchewan had also recently received a quote for a high vehicle warning system of \$1.5 M.
- John Alexander from Alberta requested information on the use of GFRP in decks. PEI, Manitoba, Quebec and Newfoundland discussed use of GFRP in decks.

2011S-16 OTHER BUSINESS

- Chris Barnes handed around a flyer on a Ground Penetrating Radar seminar for non-destructive testing to evaluate aging infrastructure.

Meeting adjourned.

Next TAC SSC Meeting: Fall Meeting in Edmonton on September 11, 2011