

# Minutes of Meeting

## **GEOMETRIC DESIGN STANDING COMMITTEE**

Spring 2015 Technical Meetings

Date: April 17-18, 2015  
Place/Time: The Seasons, Main Level, Albert at Bay Suite Hotel  
Next Meeting: September 27, 2015  
Attendees: Attached  
Distribution: Committee Members

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### **Sunday, April 17 - 9AM**

#### **Item**

#### **Action**

Welcome & Roundtable Introductions

#### **1.0 Review & Approval of Agenda (Keith Boddy)**

**MOTION** – to Approve 2015 Spring Agenda  
(Pat Chouinard/Bruno Marquis)

**CARRIED**

#### **2.0 Review and Approval of Minutes (Shaun Bidulka)**

- Corrected spelling of Tomasz,
- Amanda Pellam is **guest** not an addition to membership

**MOTION** – to Approve 2014 Fall Minutes  
(Tomasz Kroman/Gregg Cooke)

**CARRIED**

#### **3.0 New Members and Resignations (Keith Boddy)**

a) Updates to GDSC Membership

1. Addition – Kristen Poff, P.Eng. (WSP Canada Inc)
2. Addition – Cozmin Radu, P.Eng. (Stantec)
3. Retirement – Terry Biniak
4. Retirement – Blake Wilner

b) Guests

1. Rohit Viz –McElhanney
2. Steven Chan-Transoft Solutions
3. Stephanie Roller-Transport Canada

37 in attendance on Friday

#### **4.0 Chief Engineers Council Update (Keith Boddy)**

- Directive for Joint Active Transportation sub-committee. Keith provided an introduction introduction

##### TAC report

- Pool fund projects looking for funding
- 1100 delegates at Montreal conference
- Share point
- Book store documents
- Apr 6-13 Spring 2016 meetings
- 2016 Toronto
- 2017 St. Johns

#### **5.0 2015 Fall Conference Preparations (Gregg Cooke)**

Sept 27-30 Charlottetown, PEI Theme: "TAC: *Getting You There Safely*" will highlight the importance, opportunities and innovations in road safety.

Refer to attachment "*Friday Attachment 1-Abstract Manager \_ Home.pdf*"

Refer to attachment "*Friday Attachment 2-Prelim TAC Conference Program as at March 30, 2015.pdf*"

##### **Next steps**

Authors to complete papers, Deadline end of April.

Milton organizing Panel on "alternative intersections"

HWA recommendation, Panel members, Mark Doctors?

Need to formally change title.

Asked GDSC if anyone wanted to join panel – **Clayton** offered

Need moderators for paper sessions: **Andy, & Bob C.** volunteered

#### **6.0 TAC Webinars (Keith Boddy)**

Want Canadian content

Some positive interest from TAC to do this, possible topics include:

- Roundabout guide
- Turbo roundabouts
- Traffic management
- Climate change adaptation = AE, BCMoTI Dirk Nyland,
  - presentation about 2014 east coast snow fall
  - Pat C. commented on Moncton, big snow dumps resulted in significant reduction in lane widths, 1-1.5' of ice. No sight distance. Dispatch ambulance with snow plow. 10' high banks therefore closed sidewalk for safety. Will be interesting to see if any policy changes occur to better handle future events like this.

## **BREAK**

### **7.0 Project Reports**

#### Roundabouts Design Guide Project Update (Keith Boddy)

- Serious staffing issues 3 have left original company and has resulted in delays
- Still waiting for final draft for final review estimated May 15-22, completion in August.
- 39 items to review
- Will send to committee in August prior to Fall meeting so at fall meeting committee can vote to approve for Chief Engineers balloting
- Still time for comments
- May need some images/exhibits
- Roundabout primer will be added (Aug)

Gail – 300-400 roundabouts in Canada. Will be speaking tonight. Nova Scotia has a Proposed Project to build a Canadian GIS database. US has 3-4 thousand roundabouts

Any concerns about process??? No issues raised by GDSC.

#### Geometric Design Guide Update (Eric Christiansen)

- Project is on schedule
- First draft complete (all 10 chapters)
- 26 members of steering committee
- 3000 odd comments have been received.
- Used SharePoint 60-70 people
- 2<sup>nd</sup> draft in next 4 months to review at Fall conference
- Fall 2016 presentation to Chief Engineers
- Looking at revisions & additions to try to incorporating

#### Additions & Revisions (Eric Christiansen, also refer to Tim Murphy presentation on Saturday)

- GDG based off of AASHTO. Do we just adopt revisions or not.
- Stopping Sight Distance AASHTO 2005 revision – should go to newer 0.6
  - Eye height difference of 2 cm
- Gap acceptance
  - AASHTO has modified methodology. TAC will still keep both methodologies  
Designers need to be aware of the differences
- Encroachments (guardrail) TAC has been using older AASHTO methodology. Now have corrected methodology. “e” value reduction of about 40m, and reduction due to traffic volume.
  - Adding additional guardrail not safer so reducing the length is positive.

Looking for feedback on these issues. Also looking to fill two vacancies

Extended review committee

What's Next project wise?

**other topics not covered in rewrite:**

- Interchanges
- Access
- Cross section
- LVR

**Access Management** (not a major rewrite) Should we put together a team to look at revising. Safety committee has a project now. Maybe can piggyback on that initiative.

Could be pulled out of guide  
Issue is development and planning rather than geometric design.

**LVR** – Henning B has created a draft update for review

**TRB risk based design** – combine safety & geometric manual in the future.

Will discuss tomorrow

2015 5<sup>th</sup> International Symposium On Highway Geometric Design (Steven Chan)

Steven provided an update on upcoming Symposium in Vancouver June 22-24 2015.  
225 registrants + 75 applicants working on getting visas, expecting 300-400 total.

180 received, 150 papers accepted  
7 workshops  
Tours

Visit [www.ishgd2015.net](http://www.ishgd2015.net) for full details.

**LUNCH BREAK 11:30-1:30**

**8.0 TAC Webinar update (Kristine)**

Training and workshops

Hot topics or elements of guide looking for experts to team up with TAC to deliver  
Content or recommendations give her a call. TAC would market everything.

Climate Change – 3 potential, AE, MoTI, NB

## **8.0 Roundtable (Keith Boddy)**

Gregg Cooke (Stantec)

No comment

John Hammer (Region of Waterloo)

LRT, geometric design integration into roads, side runnings one side curb & property line. Not done in North America yet. How to design through access and intersections, tapers & offsets. Mostly European experience. This is a new challenge. Hoping to bring a presentation in the future.

Steve Dempsy Toronto

Metro Links. Complete Street guide. Pan Am Games in August

Robin Casavant (City of Edmonton)

Use of Soil cells in urban areas. 15cubic meters required, difficult to fit in urban setting. Ownership & maintenance. Looking for advice on design. Zane (ISL) may have done something.

Sylvain Felon (City of Montreal)

Challenge is competing views of stakeholders. Redevelopment of old areas, 20+ stories residential office hotel and commercial. Lot of new traffic (car, peds, etc). Traffic and street design. Elected officials want more bus lanes, wider bike lanes and sidewalks. Working on master plan of how streets will look, give the street back to the people. Budget & staff cuts , aging infrastructure and difficult to upgrade.

Tim Murphy (Parsons)

Regional transite plebisit to at 0.5% tax. Many projects that they want to fund. No & Yes side. Lots of improvements since first sky train.

Federal funding building grants , how would project adapt to climate change, scientists don't really know what is going to happen. Bridge example – adapt design to modify in the future if required.

Bill Kenny (Albert Transportation)

Designated lanes – looking for input on allowing busses on the shoulder to improve capacity. Bus priority in peak times only.

Eric Christianson (Manitoba Infrastructure)

Capital budget doubled in 2 years, a challenge with staffing cuts. Under pressure to spend the money. Doing lots of paving. Don't have staff to get other projects going.

Research updates, GDG, why are we using 1940 research? Because we have not done any new research. We don't do a lot of work with universities. Using AASHTO too much or not enough. Would nice if Canada would develop some of it's own research.

Climate change. Significant flooding in past, Province is spending 100 mill to make province more flood proof. New dykes, raise dykes, etc.

Communities are starting to think about complete streets

Jeff Grang (Dillon)  
Extended budgets

Webinars – urban situations, clear zones in urban areas,

City of Winnipeg just developed complete use of road corridors,

Challenges to provide bike lanes etc. Traffic calming circles not well received

Bruce Biglow (Morrison Hershfield)  
No Comment

Leonard NG (York Region)

Bus rapid transit project, directed to design for urbanization, include bike lanes on both sides, to do this had to reduce boulevards and soil cell sides. 5 contracts, 1 done 2-3 more than ½ done,

Utilities conflict issues. Tried to have common trench, but ended with hydro poles both side

Assessability due to “Act” tactile strips added. Most challenging is width of ROW to contain all utilities.

Karim Abbany (AMEC)  
Webinar – New for GDG, and roundabouts

Rohit Viz (McElhanney)

2 project issues: rumble strip in median and center line, Not clear what collisions these prevent

Calgary – transit project, bus into median how to separate left turn and through traffic. City of Richmond BC has done this in the past.

Brett McLean (Rothesay, New Brunswick)

Brutal winter Jan –March Strategies/ lessons learned 12-14 feet of snow

Climate change – flooding in Moncton last few years, looking at updating old streets drainage systems

Consideration for active transportation is more common

David Kozak (WSP)  
No Comment

Bob Koziol (MMM Group)  
No Comment

Trend active transportation piece default was shoulder bike lane now separated bike lane, driveways, intersection and bike left turn issues. Need guidance City of Toronto have had some success

Zane Sloan (ISL Engineering)

Adaptation for climate change committee only for BC

PECIC discussed APEGBC on committee, MOTI will issue new policy this summer and directing climate consideration into everything we design this summer. Design criteria sheet

APEGBC is creating a practice guideline of methodology summer 2016. Zane to provide status updates to committee

PECIC developing new tools like IDF curves

Committee discussion – What are other Provinces doing?

Alberta – bridge engineers have provided some feedback, numbers not increasing but frequency is

Ontario has completed a study for resilience of the drainage infrastructure. Most of drainage infrastructure has been over designed in the past so not a concern at the moment.

Nova Scotia – Storm surge is significant issue. Investment in dykes required. Province would be inundated

Do not want to make bigger but build wiser.

Patrick Chouinard (Fredericton NB)

Ottawa – 3 new underground stations, LRT 3 yrs to go. 2.5 km tunnel, shutting down 6km transit, building 22 cars next year.

Question asked if GDSC could have a tour at next spring meeting.. Presentation tomorrow on project. Planning & research committee at 1:30 Will provide overview

Bruno Marquis (MTQ)

Project challenge – be more specific in defining project improvements.

Access to mining company – what design standards to adopt?

Webinar topics-cover updates to manual

Research updates – safety predict safety in roundabouts, TRB had a few articles.

Geometric safety of road users

Brian Sorensen (NBDTI)

Budget constraint lot of rehab , bridge, culvert pavement, tropical storm Aurther, culvert sizes increasing a lot

Arshad Azhar (MTO)

No Comment

Joe Bucik (MTO)

Main thing going on now is the Pan Am games. MTO is providing coverage and routes to get to venues. HOV use for athletes. Social engineering to reduce traffic flow. Modified work hours, remote work, etc to reduce traffic during games.

Research- request from 407 design, water flow required to be clean and controlled volume. Ditch liners being tested, biomass filters as well, University of Guelph. Waterloo

looking IDF curves updating. New model comprehensive for roadway, look at past rainfall to determine trend analysis to use to predict future. Will not be able to predict temp.

Complete streets. Issued bike design guide for corridor and highway.  
Book 18 manual to design bikes for urban environment includes signs and operation  
Located on website:

Will first define highways important for bike network, then look at the details – underway by end of the year.

Balancing between autonomous vehicles vs human factors coming

Clayton Rudy (McElhanney)

Soil cells working using these

Bus lanes and shoulders – Toronto using on DPD and Mississauga, Bus must not travel more than 20km/h faster than vehicles beside it. Cue jump lanes, ramp bypass, and interchange to interchange are common bus shoulder applications.

Mini roundabouts – confusion with public regarding what a properly designed roundabout is. There are some old bad designs. Be careful with classification.

Issues, human factors applied to geometric design - project to support decisions??

P3's can miss out on innovation due to cost.

Risk based design

Andy Harvey (City of Mississauga/CITE)

Downtown area LRT, looking for money. Environmental review done. Transit way east west. Underground through downtown. How to design and how to phase?

Center and boulevard 30% LRT designs have been completed , bike boulevard designs

Gayle Bursey (Region of Peel)

Document Ped and bike design guidance, Book 18, for retrofitting or planning compiled references and created a document. Just came out this month. For planners and designers. Need to stop people wasting time

Ped & Bike Facility Design Guidelines

[www.peelregion.ca/pw/construction](http://www.peelregion.ca/pw/construction)

Henning Buch (CH2M Hill, Calgary)

LVR no current standards, has started a rewrite of old guide. Needs reviewers to look at it

Michael Chiu (MMM Group)

No Comment

Jon Medori (Associated Engineering)

Interested in Climate change. Wet in Lethbridge and major repairs

Steven Chan (Transoft Solutions)  
No Comment

John Bolger (City of Calgary)  
Construction project, intersections 60deg turns. Complete use of road corridors. 5km of cycle track downtown

Last Fall complete streets policy approved. Feb new subdivision design

Soil cell design

Geoff Millen (MMM)  
No Comment

Carl Clayton (Stantec)  
No Comment

Binay Yadav (GNWT-Transportation)  
No Comment

Stephanie Roller (Transport Canada)  
New railroad xing standards.

Ryan Crane (PEI TIR)  
Snow issue. Dec 60-100mm of rain localized 150mm, 7 bridges lost 7mil (1 yr capital budget), 9 mil total. Will review policies

Unique projects – 2 roundabouts, 1 mini \$200,000 in Cavendish paint markings only. On low volume roads No side curb features (i.e. open ditch) want to build the larger one for \$500,000

Most of work in rural areas. Both will be built by end of August

Tomasz Kroman (WATT Consulting Group)  
No Comment

Shaun Bidulka (Associated Engineering)  
Mentioned TFN comprehensive community development

Keith Boddy (Nova Scotia)  
Cycle routes, Blue route for tourists, identify for future x-section changes

Widen shoulders for safety.

Lots of projects coming,

**BREAK**

### **9 Member Presentations**

Friday Presentation 1-Canadian Naturalistic Driving Study (CNDS) by John Pearson

Friday Presentation 2-Compilation Succession Planning Presentation by Ana Lopez

Friday Presentation 3-Railway Safety at Grade Crossings by Jay Rieger

**MOTION** – to adjourn GDSC Friday April 16  
(Zane / Eric)

**CARRIED**

### **Saturday, April 17 - 9AM**

27 in attendance

#### **Awards.**

Blake Wellner, Terry Bidniak, Roy B, Larry P. have retired, Should we put these names forward for TAC awards? How many can we put forward? Not sure how the selection process works. **Keith to pursue.**

### **10 TOMSC Update (Lianna) – will provide notes**

Emerging technology:  
Variable speed limits  
Wildlife detection systems  
Joint working group for automated vehicles set up  
FHWA presentation

3 projects for fall conference

Joint active transportation – ok

List of projects:

Will send copy of summary

### **11 RSSC Update Report ( Tim Murphy )**

- refer to attached report)

## **11.0 Subcommittee Reports**

### **Revisions and Additions Subcommittee (Tim Murphy)**

Refer to attached presentation.

**MOTION** – to Approve 2014 Fall Minutes **CARRIED**  
(Tomasz Kroman/Gregg Cooke)

**MOTION** **CARRIED**  
“That the GDSC supports adopting the AASHTO 2011 methodology for SSD, which includes deceleration rate of 3.4 m/s<sup>2</sup>, driver height and object height, and provide a comparison between current (0.38 m) and new object height (0.60 m) for crest curves.”

**MOTION** **CARRIED**  
“That the GDSC supports adopting the AASHTO 2011 encroachment values for the new Geometric Design Guide.”

### **Joint Roundabouts (Keith Boddy)**

15 people met  
“Standard fare” roundabouts are more common therefore not a lot of new challenges.  
NS has build a GIS database for roundabouts constructed in Canada. Who wants to participate?  
25 criteria tracked by NS.  
2016 conference – lots of roundabouts – possible tour, Keith has started the process by asking TAC.

## **12 GDSC NEXT STEPS**

- 1. What do we want out of our meeting?**
  - Working groups discussing design details.
  - Need to discuss issues raised in round table
  - Presentations about projects – then discuss issues
  - Still need to invite outside presentations.
  
- 2. Why do you attend?**
  - Want to be involved.
  - To debate issues
  - To learn
  - To advance practice of road engineering
  - Workshops positive step in right direction
  - observer
  - want to change GDG to be useful in urban environment
  - support

### 3. Are you satisfied?

- o No
- o More new members
- o Need to discuss issues raised in round table
- o No new technical detail
- o Design awards from our committee. Put on agenda for Fall. Develop Strong criteria
- o Seems more business now.
- o Urban content lacking.
- o Name change for committee – agenda item.
- o Need to get relevant
- o Use Twitter
- o Would be nice to be more engaging
- o Where do we want the committee to go. Make sure we are not forgotten

GDSC will create working groups to address the issues not addressed by GDG rewrite. Will provide opportunity at meetings to break out into work groups to discuss and resolve issues.

Goal is to develop Terms of Reference for Fall 2015 Meeting. Initial topics for review are:

#### 1. Interchanges

Chair: John Bolger

#### 2. Access Management

Chair: Eric Christiansen

Planning & Design? TRB has recent update. Separate document. Joint project initiated by 1 committee. Joint committee.

#### 3. Cross Section

Chair: Bob Koziol

#### 4. LVR

Chair: Henning Buch

Henning has prepared a draft version that was submitted to R&A committee.

Publishing: will need a whole new group of reviewer, prob. 3 yrs, Create a standalone guide, then turn into a chapter. Discuss with Chief Engineers. Upload to sharepoint.

Will use Sharepoint tool for collaboration.

### 13 2016 Spring Meetings

Member presentations:

Zane Sloan : adaptation to climate change

John Bolger

Phil Clark

John Hammer

Spring meeting Saturday assume afternoon breakout working group meetings 9-5

**12.0 Closing Remarks/Adjournment**

- Keith Boddy requested members to join groups

**MOTION** – to adjourn GDSC Saturday April 18  
( Zane / Jon M. )

**CARRIED**