



ASSOCIATION  
INTERNATIONALE DES TUNNELS  
ET DE L'ESPACE SOUTERRAIN

ITA

AITES

INTERNATIONAL TUNNELLING  
AND UNDERGROUND SPACE  
ASSOCIATION



# CANADA

## ACTIVITY REPORT 2015



Tunnelling Association of Canada  
Association canadienne des tunnels



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ORGANIZATION

# Tunnelling Association of Canada

## STRUCTURE

The Tunnelling Association of Canada (TAC) was established in 1980 as a national association supported by several regions: British Columbia, Alberta, Manitoba and the Prairies, Ontario, Quebec, and the Maritimes. Key objectives of TAC include:

- Promote the development and use of underground space to decision makers and the public;
- Exchange and inform the use of Canadian underground design, excavation and construction technologies;
- Facilitate the exchange of information on related activities and technical developments;
- Represent the interests of the tunnelling and underground excavation community in matters of technical and public concerns;
- Act as an intermediary body between ITA and those individuals and organizations in Canada who are interested in tunnels and underground excavations;
- Disseminate throughout Canada the news of the activities of ITA and the technical information available as a result of those activities; provide support for the TAC Young Members division;
- Organize the annual Canadian Tunnelling Awards and bi-annual TAC Conference; and
- Provide student scholarships..



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ORGANIZATION

# Tunnelling Association of Canada

## STRUCTURE (cont'd)

The TAC organizational structure consists of the following 6 Officers and 10 Directors:

### ***Officers:***

Erik Eberhardt, President,  
Rick Lovat, Immediate Past President  
Steve Skelhorn, Vice President, East  
Bruce Downing, Vice President, West  
Michelle Richards, Treasurer  
Derek Zoldy, Secretary

### ***Directors:***

Serge Moalli, Director, British Columbia  
Heinrich Heinz, Director, Alberta  
Jason Mann, Director, Manitoba & Prairies  
Walter Trisi, Director, Ontario  
André Rancourt, Director, Québec and Maritimes  
Nichole Boulton, Director  
Boro Lukajic, Director  
Lara Reggin, Director  
Rick Staples, Director  
Seamus Tynan, Director

TAC engages the services of Gibson Group Management Inc. (GGMI) to manage the administration of the association through GGMI's offices in Richmond, British Columbia, Canada.



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2015 - ACTIVITIES

# Tunnelling Association of Canada

## Main Activities in 2015

### **TAC 2015 Workshop – Challenges and Innovations in Tunnelling**

In non-conference years, TAC organizes an industry workshop to coincide with the AGM and the Awards Dinner. The October 4-6, 2015 event at Queen's University in Kingston, Ontario, Canada was a tremendous success attracting over 135 participants. A successful pre-workshop reception on the 4<sup>th</sup> was well attended, as was the optional technical tour to the Brockville Tunnel on the 6<sup>th</sup>.

### **TAC 2015 Awards Dinner**

2015 was the fourth year that the Tunnelling Association of Canada (TAC) presented achievement awards to recognize deserving individuals and projects in the Canadian tunnelling industry. In 2015, the awards were modified to present the Innovative Project of the Year as well as the Infrastructure Project of the Year. Added in 2015 was the Photo of the Year Award. Full 2015 TAC Achievement Awards details are available on the TAC website at

[http://www.tunnelcanada.ca/achievement\\_awards.html](http://www.tunnelcanada.ca/achievement_awards.html).



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2015 - ACTIVITIES

# Tunnelling Association of Canada

## Working Groups

Four TAC members were nominated in 2015 to serve on various ITA Working Groups including:

Dr. Jinyuan Liu, Ryerson University - ITA WG 2: Research

Gary Kramer, Hatch Mott MacDonald - ITA WG9: Seismic Effects

Hamid Javady, MMM Group Limited - ITA WG 17: Long Tunnels at Great Depth

Dr. Heinrich Heinz, Thurber Engineering - ITA WG 19: Conventional Tunnelling

TAC members look forward to representing Canada on the WGs.

## Publications

TAC is coordinating the development of a commemorative “coffee table” book on Canadian Tunnelling. A draft should be available in the fall of 2016 with final printing expected in 2017. In addition, TAC collaborates with *Tunnels & Tunnelling* on their North American edition to publish articles on Canadian tunnelling projects.



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PROJECTS

## ***Toronto-York Spadina Subway Extension Twin Tunnels Project, Toronto, Ontario***



The Toronto-York Spadina Subway Extension (TYSSE) project is an 8.6 km extension of the existing City of Toronto subway system. The subway extension includes 6.7 km of bored twin tunnels, a 280 m long hand mined section of triple tunnel and six new stations. The project includes the first use in Ontario of trailing shield annulus grouting, and first use in Canada of RFID chips installed within each precast concrete tunnel lining segment used for quality control and future inspection and quality management.



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PROJECTS

## ***ECLRT – Eglinton Cross Town Light Rail Transit, Toronto, Ontario***



The ECLRT project is broken up into two contracts. The first contract, currently being constructed by the joint venture of Obayashi / Kenaidan / Kenny, has completed their first two tunnel drives between Keele St. and Allen Rd., utilizing two CAT EPB TBMs. The two TBMs were removed, repositioned, commissioned and have resumed mining once again on the balance of the tunnels between Allen Rd. and Laird Dr.



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PROJECTS

## ***OLRT – Ottawa Light Rail Transit, Ottawa, Ontario***



The OLRT project is 12.5 km of LRT line, with a 2.5 km tunnel and four underground stations in the downtown core. The P3 contract was awarded to the Rideau Transit Group made up of Ellis Don, SNC Lavalin, and Dragados Canada. Construction is well underway; the tunnel is currently being excavated by SEM and Road-header methods and is scheduled to be completed in 2016.





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# PROJECTS

## ***Valley Line LRT Extension – Edmonton, Alberta***



In Edmonton, work continues on the \$1.8 Billion low-floor line to Mill Woods from City Centre, which includes an approximately 400 m long twin tunnel section in the North Saskatchewan River valley section.

Final proposals are expected in the fall of 2015 with the successful team selected by the end of 2015. Major construction is expected to begin in 2016, with expected completion in 2020.



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PROJECTS

## ***Upper Lillooet/Boulder Creek Hydroelectric Facilities – Pemberton, BC***

The Upper Lillooet HEF is an 81.4 MW plant consisting of an approximately 2500m long inverted D tunnel shaped 6m wide and 5.5m high: to date, a total of approximately 420m of tunnel has been excavated in difficult ground.

The Boulder Creek HEF is a 25.3 MW plant comprising a 2900m long inverted D shaped tunnel 3.6m wide x 4.5m high to be mainly excavated from the downstream portal: in addition, approximately 2km of that tunnel is to be excavated with a 13% uphill grade. So far, 979m of the Boulder Creek tunnel has been excavated.





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PROJECTS

## ***Evergreen Line, Vancouver, BC***



The Evergreen Line Rapid Transit Project is an 11 km extension to Greater Vancouver's rapid transit system. The project includes a 2 km long , 10 m diameter bored tunnel. The design-build-finance contract was awarded to EGRT Construction and the tunneling work is being conducted by SNC-SELI Joint Venture. The tunnel was excavated with a CAT EPB TBM – boring was completed in November 2015.



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PROJECTS

## ***Port Mann Water Supply Tunnel , Vancouver, BC***



Tunnelling on Metro Vancouver's Port Mann Water Supply Tunnel Project was completed in July 2015. The project consisted of two slurry wall shafts, each approximately 60 m deep and located on either side of the Fraser River, connected with a 1 km long, 3.5 m diameter tunnel. Excavation of the tunnel was carried out using a CAT EPB TBM; construction was undertaken by the McNally-Aecon Joint Venture.



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# FUTURE ACTIVITIES

## Tunnelling Association of Canada

### 2016 Activities Planned

The BC and Ontario Chapters are very active and expect to hold 6-8 monthly meetings, each, in 2016. These meetings feature invited speakers on regional tunnelling projects, or technical tours.

TAC's 2016 Annual Conference will take place in Ottawa, Canada from October 16-18, 2016. Over 250 delegates are expected, as well as in excess of 25 exhibitors. Full details of the conference are available at [www.tac2016.ca](http://www.tac2016.ca). The 2016 conference will also feature TAC's Annual Awards Dinner where individuals and projects will be recognized for their outstanding contributions to tunnelling and underground space. Award nominations will close on June 1, 2016.

The Tunnelling Association of Canada presents the Dan Eisenstein Memorial Scholarship each year to a post-graduate student planning to undertake or currently undertaking post-graduate studies in the field of tunnelling at a recognized university in Canada.

Finally, efforts to increase TAC's student membership are paying off with over 10% of the total membership expected to be in the student category in 2016. Our chapters are working directly with a number of the universities to run events on campus and student-focused tours.