

The Tunnelling Association of Canada (TAC) promotes the use of underground space in support of growing urban populations in the key centres of Vancouver, Calgary, Edmonton, Toronto, Ottawa, Montreal, and others.

TAC is a “Not for Profit Organization with a head office and Association Administer based in Vancouver, British Columbia. From the success of WTC 2010 in Vancouver the growth of the underground projects and the increased activity of the association, TAC has engaged a professional association administrator to manage the affairs of TAC.

TAC is National Association supported by four regions, British Columbia, Alberta and The Prairies, Ontario, Quebec and the Maritimes.

Growing needs for transportation and service infrastructure is being met through the use of underground space. In addition, Canada’s expansive mining and hydroelectric sectors is also pushing the development of underground technologies and utilization.

Transportation Tunnels

Transportation tunnelling in Canada is currently undergoing a period of rapid growth with several Metro and Light Rail tunnels being constructed or planned in Vancouver, Toronto, Edmonton, Ottawa and Montreal. This growth is in response to increasing populations within these urban centres as well as the need to provide alternative forms of transport that is more efficient, environmentally conscientious and sustainable. Work is currently underway on the York Spadina Subway Extension in Toronto where the first two of four tunnels are now complete with remaining tunnels expected to be completed within 2013. The Eglinton Cross Town Light Rail also in Toronto has just awarded the first phase of the tunnel works and is tendering for the second phase in 2013. The Evergreen Line in Vancouver has also been awarded and construction of shafts and site preparations are on the go with tunnelling to commence in early 2014. The Ottawa LRT is in final stages of award and will commence construction in 2013 as well. The other major urban centres of Edmonton and Montreal are actively designing and preparing to tender extensions to their current transit systems as well.

In addition to these urban Metro and Light Rail systems being developed, there is also a growing demand for additional capacity to Canada’s rail transport system to move more raw materials and manufactured goods from ports on the east and west coasts. The most difficult sections of these upgrades will be the deep hard rock tunnels through the mountains on the west coast. Work on these projects is anticipated to start in the next few years. Tunnels are also being planned for natural gas and oil pipelines to move oil and gas from Alberta and northeast British Columbia to new LNG plants on the west coast where it can be exported to markets in Asia Pacific.

Water and Sewer

Infrastructure within Canada's urban centres that provide water and waste removal are in the process of large upgrades due to aging systems and increasing populations in these areas. One of the largest projects currently underway is the South East Collector in the York Region north of Toronto which commenced tunnelling in the summer of 2012. There are currently four TBMs in operation on this project. The Port Mann Main in Vancouver also started excavation early this year. Work to tender in 2013 will include the Hanlan Feeder Main and the twinning of the West Trunk Sewer both in Peel Region (west of Toronto). Work also continues on sewer systems in Edmonton and Calgary as these cities add capacity for rapidly growing populations fuelled by the oil and gas industries.

Hydro Power

Hydro Power in Canada continues to grow with the recently completed tunnel at the Sir Adam Beck projects in Niagara Falls which will allow for maintenance of the older tunnels as well as increase in capacity of the two plants. Projects are also being explored in Newfoundland and Labrador with the potential addition of 2000 MW on the Lower Churchill project. In Quebec, work is moving forward on the Romaine River project to develop four sites: Ro-1, 2, 3 and 4. Ro-2 is presently under construction, while Ro-1 and Ro-3 are at the design stage. Projects in British Columbia include the Waneta Expansion in southern B.C. and John Hart Project on CANADA - Activity Report 2012 Vancouver Island. The latter is currently at the request for qualifications stage and will include upgrades and replacement of the existing power station. BC Hydro is advancing the Site C clean energy project in north eastern B.C., which will include several tunnels.

Future of Tunnelling in Canada

The tunnelling industry in Canada is thriving and is expected to continue to do so well into the future. This can be seen by the number of large foreign companies that are establishing offices in Canada to bid and work on Canadian tunnelling projects. This is in parallel with the extensive level of Canadian tunnelling expertise that is in high demand on numerous international projects; an expertise honed through the large number of Canadian tunnels and mines that have been completed in a variety of challenging geological settings, in major cities and remote locations. With the work currently underway tunnelling is a growing industry, and on the heels of this current work, future plans are progressing quickly and pointing towards continued growth well into the future.