



# **NORTHWEST NEWS**

## **North American Society for Trenchless Technology Northwest Chapter**

**Alberta, British Columbia, Washington**

**November 2003**

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## **Chairman's Report**

Welcome Back ...

It has been three years since our last edition of Northwest News was published. So what has been happening during that time?

Quite a bit, actually.

In Alberta, the Edmonton group has been soldiering on, continuing to host technical luncheons through the fall/winter months, as well as organizing special events such as an annual trenchless symposium, and in October 2003, holding the two day Horizontal Directional Drilling Good Practices Guidelines course. The course was presented by Sam Ariaratnam, Dave Bennett, Frank Canon and Casey Como, with John Hemphill representing NASTT Headquarters. There were 36 registered participants, and all involved felt the course was a great success and good value to those in attendance.

Activities in Calgary have also been heating up. Following the "2002 Beneath Your Feet" trenchless symposium held in Edmonton last December, Jason Lueke and several others approached the Edmonton organizers with the idea of having a symposium in Calgary in 2003. It was decided that alternating the symposium location between Edmonton and Calgary would benefit everyone. An organizing committee was set up and with additional assistance from the Calgary chapter of CSCE, the Calgary Geotechnical Society and the U of C NASTT Student Chapter, the "What Lies Beneath" trenchless symposium came to be. The symposium was held on November 19, 2003 at the Blackfoot Inn and attracted over 120 registrants, 7 sponsors, and 15 exhibitors. Those in attendance were treated to 12 interesting presentations, and a history of trenchless technology from Mark Wallbom, Chair of NASTT, who was the keynote speaker at the symposium.

## **SUCCESSFUL HORIZONTAL DIRECTIONAL DRILLING GOOD PRACTICES GUIDELINE (HDD - GPG) COURSE IN EDMONTON**

Things have been busy for our compatriots in BC as well. With the level of interest high in the lower mainland area, the BC members have decided to strikeout on their own as a separate chapter. To this end, there has been a lot of hard work put in by the BC group, as well as the Northwest Chapter and the National NASTT Boards. Agreement has been reached on all the issues, and all that is remaining is for TTBC to prepare a set of Bylaws for approval by the NASTT National Board of Directors. This is expected to occur in early 2004. We expect the TTBC Chapter will maintain its high level of enthusiasm and continued success as they embark on their journey as an independent chapter.

Washington State is also experiencing some renewed interest in trenchless activities. Kim Staheli-Louch is back on the Board to help Eileen Robinson with drumming up interest and events. Current plans are under way to hold the HDD Good Practices Guidelines Course in the Seattle area in fall 2004. Hopefully this will provide a launching point to some sustained interest and activities for our Washington members.

Looking ahead, we have the Northwest Chapter Annual General Meeting coming up in March at No-Dig in New Orleans. We would encourage everyone who is planning on being at No-Dig to take the time to attend the AGM. With TTBC expected to have Chapter status by that time, we will be looking at revisions to our bylaws to reflect this change, and input from as many members as possible as to how we want the Chapter to move forward will help keep us focused and strong.

In closing, we have had an eventful three years to report on, and I expect that the next three years will be just as exciting as trenchless opportunities continue to grow. However, rather than waiting three years for your next update, you can expect to see the next news letter in about six months as we re-establish our biannual publishing frequency.

Dave Krywiak  
Chair, Northwest Chapter

The Northwest Chapter of North American Society for Trenchless Technology (NWNASTT) with the assistance from the NASTT Executive Director, John Hemphill, held a two-day short course on Horizontal Directional Drilling – Good Practice Guidelines on October 2 & 3, 2003 in the City of Edmonton, Alberta, Canada. The objective of the course is to provide a set of guidelines that will assist contractors, engineers as well as the owners to have successful HDD installation, through the training of their operators and supervisory personnel. The course was delivered by Dr. Sam Ariaratnam of Arizona State University, Dr. Dave Bennett of Bennett/Staheli Engineers, Frank Canon of Baroid Drilling Fluids and Casey Como of Commercial Trenching. There were 36 participants from the industry including five students from the University of Alberta.

Submitted by: Ken Chua, MSCE, P. Eng.  
October 27, 2003



HDD – GPG Organizers and Instructors



HDD –GPG Participants

# LOCAL GROUP NEWS

## ALBERTA



Technical luncheon meetings have been held in the University of Alberta, Edmonton during fall and winter months of every year. The event was co-sponsored by the Northwest Chapter of the North American Society for Trenchless Technology (NASTT) and the Construction Engineering & Management Group at the University of Alberta. The technical luncheon meetings attracted about 25 individuals per meeting with representation from contractors, consultants, manufacturers, academia and government.

Another successful trenchless symposium was held on December 5, 2002 in the Ramada Hotel and Conference Center in Edmonton. The event was organized by the Canadian Society of Civil Engineers (CSCE), the Northwest Chapter of NASTT, Tunneling Association of Canada (TAC) and the University of Alberta NASTT Student Chapter (UANASTTSC). The symposium attracted over 150 individuals, 19 exhibitors and 8 sponsors. The theme for the symposium was “Beneath Your Feet – installation, inspection, repairs and maintenance using trenchless technologies”. The format of the symposium consisted of two morning sessions concentrated on design and inspection issues. Another two afternoon sessions were conducted mainly on installation techniques and example projects. The keynote speaker for the event was Mr. Bernie Krzys, editor for the Trenchless Technology Magazine. Overall, the symposium was very successful based on the feedback from participants.

The Annual General Meeting (AGM) for the Edmonton Region of the Northwest Chapter of NASTT was held at the University of Alberta on March 27, 2003. Nomination and election of the Edmonton Region was held during the AGM. The following positions were filled:

NASTT Liaison: Ken Chua                      Edmonton Chair: Dave Krywiak                      Secretary: Albert Kwan  
Treasurer: Neil Kucharski                      Education & Training: Siri Fernando  
Student Chapter Liaison: Mohamed Al-Hussein, Hyoungkwan Kim & Hussein Al-Battaineh  
Directors at large: Alan Miller, Herman Ng, Graham Sterpharn, John VanAndel, Al Strachan, Leo Rodrigue, Simaan AbouRizk

The two-day course on HDD Good Practices Guidelines has been successfully staged in Chateau Louis of Edmonton on October 2 and 3. There were 36 participants including 5 students. There were representatives from municipal governments, consultant engineering, utilities companies and private contractors. All participants agreed that the course is very informative and useful. The general write-up is on page 2.

The joint symposium on trenchless technology switched to the City of Calgary in 2003. The symposium in Calgary this year was jointly organized with CSCE & Calgary Geotechnical Society. The keynote speaker was Mr. Mark Wallbom, current chair of NASTT. The venue was in the Blackfoot Inn and there were over 120 participant for this one-day symposium.

# BRITISH COLUMBIA



TTBC held a two-day conference on trenchless technology on July 8-9, 2003. The title of the workshop was “Trenchless Technology BC - No-Dig Live 2003”. The event took place at the Burnaby campus of BCIT with two tracks of technical sessions each day. Trade shows and live demonstrations of trenchless technology were part of the workshop with approximately 50 participants for the two days of events.

The annual general meeting (AGM) for TTBC was also held in conjunction with the conference on July 8, 2003. During the AGM, a majority of TTBC members voted to form a separate chapter under NASTT. TTBC is thus moving towards becoming a NASTT Chapter. TTBC recently completed a special

resolution to become NASTT Chapter with the results indicating approval. This process will probably take until early 2004 to be resolved. TTBC is currently revising their Bylaws to submit to NASTT for approval.

Technical luncheon meetings have been offered throughout the year with the final luncheon being held on December 10, 2003 at the Burnaby Mountain Golf Club. In addition, TTBC is also developing an on-going relationship with BCIT.

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# WASHINGTON



There have been no activities held in Washington State to date due to lack of organization. The Northwest Chapter Board is presently working on getting things going. Washington State NASTT members are encouraged to support the local organizing committee and participate in future events.

The short course on HDD good practices guideline is being organized for the fall 2004. This event is hoped to generate interest on trenchless technology and the technology of HDD in particular. Other courses on trenchless technology are also being considered for future events. These courses include the pipe bursting, microtunneling and the PACP condition

assessment courses.

# NORTHWEST TRENCHLESS PROJECTS

## OPEN ORDER AGREEMENTS FOR 2002 and 2003 SEWER RELINING WORKS

Several open order agreements were established for the sewer relining works in the City of Edmonton for 2002 and 2003. These open order agreements were made so that multiple programs involving sewer rehabilitation works can access the same agreement with the contractor. The sewer relining works have traditionally been tendered separately under each program prior to this year. However, the establishments of these open order agreements provide a win-win solution to both the City and the contractor. For the City, this agreement will allow for substantial streamlining in the sewer relining process and will ensure the completion of all required sewer relining works within 2002. For the contractor, this agreement will provide the assurance of work opportunity throughout the year and will allow for better work scheduling. These agreements do not prevent the City from issuing individual tender for sewer relining work as well.

There were three open order agreements established: full and partial relining, spot relining and CCTV sewer inspection. Full relining works involve lining the existing sewer from manhole to manhole while partial relining works start from a manhole and terminate somewhere before the next manhole. Spot relining is to line the existing sewer anywhere in between the two manholes. The CCTV sewer inspection agreement fulfils the requirements for CCTV in cases that our Drainage Operations cannot handle all the workload.

Several programs used these open order agreements and they included:

- Area Infrastructure Rehabilitation Program - Ritchie
- Roadway Drainage Coordination Program
- Local Sewer Rehabilitation Program
- Trunk Sewer Rehabilitation Program
- Spot Reline Requirements from Drainage Operations

The successful contractor for these open order agreements was Insituform Technologies Ltd. The total contract for the open order works was about \$3.5 millions in 2002 and about \$2 millions in 2003.

## CSO CONTROL STRATEGY - IN-LINE SYSTEM STORAGE (REAL TIME CONTROL) SITE #6

The construction project at 114 Avenue and 101 Street in the Spruce Avenue neighbourhood of the City of Edmonton has formally started with the sinking of the shaft for downstream sensor manhole in November 2002. The preliminary design for the Real Time Control structure (RTC Site #6) has been successfully completed after the co-ordinated efforts from in-house expertise and outside consultant.

In-house design expertise was primarily responsible for the successful completion of the preliminary design for RTC Site #6. The in-house design team was responsible for the design on control concept, siting, permits, structural, hydraulic and cost estimation. Techna-West Engineering Ltd. was responsible for the design work on the electrical, control and instrumentation components of RTC Site #6. In addition, constructability and risk analysis were performed during the preliminary design stage as well.

Extensive public consultation process was followed prior to the commencement of the construction for the RTC #6 facility. A public open house was conducted in the Spruce Avenue Community Center on September 25, 2002. Based on the feedback from the residence in the open house, the residence are supportive of this project. Due to the availability of the safe construction window, the construction activities were approved to be fast-tracked with the detailed design phase. The detailed design will also be performed by the combined efforts from the in-house design team and outside consultant. The detailed design will be enhanced with the additional information gathered from the construction activities and will be completed in the early part of 2003.

Most of the construction activities will be done with in-house resources. The construction activities include the downstream manhole, gate shaft, gate assembly, downstream tunnel strengthening, baffle blocks, control building, electrical instrumentation, sensor installation and commissioning. The construction of the gate shaft will take approximately 6 months to complete. Estimated completion date is winter 2003. The total estimated cost for the construction of RTC Site #6 is approximately \$1.9 million.

**CITY OF REVELSTOKE**  
**REPLACEMENT OF CPR HILL TRANSMISSION**  
**WATERMAIN**

Dayton & Knight Ltd. completed pre-design, design, and construction management for the replacement of a 300mm diameter cast iron watermain installed in the 1930's to a nominal inside diameter of 450mm. The 300mm watermain was the City's principal transmission feed to the downtown core area distribution system and was paralleled by a 200mm asbestos cement watermain. The 300mm watermain was replaced by pipe bursting due to slope stability issues and the proximity of the asbestos cement watermain. The pipe bursting section was up a steep (>20%) slope located in the Trans Canada Highway embankment and road right of way with cover typically between 0.6m and 1.0m. The 300mm cast iron watermain was upsized to 500mm HDPE utilizing pneumatic pipe bursting technology. The general contractor for the work was Oatway Construction from Kamloops, BC with specialty pipe bursting services provided by P. Barratta Construction Ltd. Of Surrey, BC."



**NORTH EDMONTON SANITARY TRUNK (NEST) -**  
**STAGE NC1**

The City of Edmonton has completed installation of 1537 m of 2920 mm I.D. segmented-liner tunnel along 153

Avenue from approximately 70 m west of Castle Downs Road (113A Street) to 127 Street. The construction and commissioning of the pump station at the 127 Street working shaft, adjacent dry well shaft and building and the monitoring/control site at 140 Avenue and 113A Street has also been completed. The project was completed on schedule and approximately \$750k below budget for 2002. In 2001, the project was approximately \$1,554k below budget. The lowest bid on the pump station and control site contract exceeded the estimate by approximately \$200k and the actual costs to completion exceeded estimates by approximately \$275k. The cost-effective and highly productive work by the in-house tunnel workers is largely responsible for the project being under budget. Quality met or exceeded requirements

**SPOT RELINE WITH LINK-PIPE**

What can we do about the hole in the pipe?" When the drainage design engineers in the City of Edmonton saw a 150mm x 150mm hole in the concrete pipe during a routine CCTV inspection last May, their initial reaction was to arrange for an open cut spot repair to replace the broken pipe. However after they checked through the records, they found that the depth of the pipe was about 4m and the pavement above the pipe had just been re-constructed. Hence it was not cost effective to proceed with the open cut method in this case.

Fortunately, the hole was located just 2 metres away from an existing manhole which provides an opportunity to carry out repair from within the manhole. After reviewing various available methods of trenchless rehabilitation, they decided on the use of Link Pipe in this particular case for the reason that the repair works could easily be done by their in-house crew from the manhole without any disruption to the newly re-constructed pavement. Also the relative low cost of the material was a major deciding factor.

Since the City of Edmonton construction crew was not familiar with the use of the Link Pipe, arrangement was made with the Richmond Hill office of Link Pipe to provide on-site assistance for the installation works. The President of Link Pipe, Mr. Lembit Maimets, P.Eng., personally delivered three 600mm long sleeves and the air plug to Edmonton one sunny morning in July and the repair works were successfully completed within 4 hours. It was estimated that the City of Edmonton saved approximately \$10,000 in direct cost alone and the project was completed in a speedy manner with minimum disruption to the general public.

Another success story in the continuous battle to fix deteriorating sewers in the City of Edmonton.

# 2003 CALGARY TRENCHLESS SYMPOSIUM

On November 19, 2003, another successful trenchless symposium was held in Alberta, this time in Calgary. Through the combined effort of the Calgary Section of the Canadian Society for Civil Engineering; Northwest Chapter of NASTT; the Calgary Geotechnical Society; and the University of Calgary Student Chapter of NASTT; this one-day event entitled "What Lies Beneath", was organized and held at the Blackfoot Inn.

Mark Wallbom, current Chairman of NASTT, and Senior Vice President of Miller Pipeline Corporation, was the keynote speaker. Mark provided his insight in trenchless technology through his address entitled "An Overview of the History of Trenchless Technologies".

Attended by 127 participants, the symposium consisted of a program of 12 speakers presenting technical and research papers, and case studies; as well as 15 exhibitors representing a variety of trenchless construction and rehabilitation technologies. Some of the presentations included "Frac-out Control Through Engineered Solutions" by Entec Consulting; "A New Restrained Joint PVC Pipe for HDD and Other Trenchless Applications" by IPEX; "Applications and Limitations of Geophysics to Trenchless Projects" by Associated Mining Consultants, and "Guided Boring" by Akkerman.



The Northwest Chapter of NASTT has had an annual symposium almost every year since its inception in 1997. This was the second time a symposium has been held in Calgary, and the seventh symposium held in Alberta. Over the past six years, the Northwest Chapter of NASTT has teamed up with the Canadian Society of Civil Engineering, Student Chapters of NASTT, the Tunnelling Association of Canada, and now the Calgary Geotechnical Society to hold this popular event. In 2004, the organizations are planning to hold this event in conjunction with the annual national conference of the Tunnelling Association of Canada in Edmonton.

## NEW STUDENT CHAPTERS APPROVED

Congratulations to both University of Calgary and University of Alberta for establishing their separate student chapter within NASTT. The student chapter at University of Calgary was approved in early 2003 while the student chapter at University of Alberta was revived recently. The student chapters have participated in the organization of the Northwest Chapter symposiums and they will be important for future events as well. Their participation in the future activities of Northwest Chapter is highly encouraged.

## SCHOLARSHIP

Several scholarships will be set up to promote interest in trenchless technology in the university level. These scholarships will be awarded to the best graduate research or the best undergraduate studies on trenchless technologies.

## SPONSORSHIP REQUEST

The University of Calgary Student Chapter of NASTT is seeking sponsors to send at least four of its student members to participate in the 2004 No-Dig Conference. Please contact Mamdouh Nasr or S. Mathiroban at (403) 220-6892 (e-mail: [smathiro@ucalgary.ca](mailto:smathiro@ucalgary.ca))

## INTERNATIONAL NO-DIG 2003

The International No-Dig 2003 Show was successfully held in the fabulous Rivera Hotel & Casino & Convention Center in Las Vegas, Nevada, USA during March 31 to April 2, 2003. The event was co-sponsored by the North American Society for Trenchless Technology (NASTT) and International Society for Trenchless Technology (ISTT). The show attracted over 1,200 participants with international representations.

The format of the consisted of 4-track technical paper sessions including the following topics:

- Evaluations & Utility Location
- HDD Assessment & Case Studies
- Pipe Bursting Assessment
- New Technology & Multi-Trenchless Applications
- Microtunneling Assessment & Case Studies
- GPR Assessment
- Education & Training
- Lining/Coating Assessment & Case Studies
- Lateral Assessment & Rehabilitation
- Condition Assessment
- Project Management

The NASTT's second annual Education Fund Auction was also conducted on March 31, 2003 during the No-Dig 2003 Show. The auction raised more than \$35,000 for NASTT Education Outreach program.

The NASTT No-Dig 2004 Show will be held in March 22 to 24, 2004 at New Orleans, Louisiana, USA while the ISTT No-Dig 2004 Conference will be moved to Hamburg, Germany for November 15 to 17.

## NEWS FLASH

**September 23** – University of Alberta Student night jointly hosted by ECES, CSCE, TAC and University of Alberta with roughly 100 students showed up for the event.

**September 25** – Participated in the APEGGA student mixer night at University of Alberta.

**October 18** – Dinner meeting with the China-Shanghai Society for Trenchless Technology (CSSTT) at Edmonton.

## UPCOMING EVENTS

**March 21-24 2004** - NASTT No-Dig Show in New Orleans, USA. The only conference and trade show of its size in North America dedicated solely to promoting trenchless technology.

**Fall 2004** - The HDD short course will take place in Washington State during fall of 2004. This is a two-day training on the best practices for HDD.

**September 26-28, 2004** - Trenchless Symposium in association with the TAC. This event will be in the Fantasyland Hotel of Edmonton, Alberta. The Northwest Chapter of NASTT, CSCE and TAC will jointly sponsor this symposium and conference.

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This is your newsletter. We are looking for articles, events, suggestions and ideas for the next issue. If you would like to receive the NORTHWEST NEWS, contact the editor. Letters to the editor are welcome.

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NORTHWEST NEWS is published two times a year by the Northwest Chapter of NASTT.

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