



Trenchless Technology Center *Newsletter*

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Composites One Joins TTC Industry Advisory Board

The TTC is pleased to welcome Robert Cannon, CIPP manager at Composites One, as an industry member of the TTC Industry Advisory Board. Composites One is a distributor of composite materials in North America and was created in 1999 through a joint venture between GLS Corp. and Cook Composites and Polymers. It has 33 local distribution centers, more than 200 supplier partners and more than 10,000 customers.

The Industry Advisory Board for the TTC is now more than 40 members strong with approximately 10 companies/associations/cities providing annual sponsorship to help the programs of the center.

TTC to Study the Impact of Utility Location and Characterization on Highway Projects

Responding to a national request for proposal, a research team, led by the TTC, was successful in receiving a contract for a project titled "Encouraging Innovation in Locating and Characterizing Underground Utilities" from the Transportation Research Board as part of the second phase of the national Strategic Highway Research Program initiative. The contract is for \$299,983 over a 20-month period and the research team comprises Ray Sterling (TTC), Jim Anspach (So-Deep Inc), Erez Allouche (TTC); Chris Rogers (Univ. of Birmingham, United Kingdom), Kate Hayes (retired), Karla Weston (Civil Design & Const. Inc.) and Jadranka Simicevic (TTC).

Impetus for the Research Program: Failure to accurately locate and characterize buried pipes, cables, conduits and other underground utility related structures is a major cause of delay in many construction projects in developed areas, including highway renewal and expansion projects and utility installation and rehabilitation/replacement projects. Such delays often extend the duration of the project, resulting in additional costs to the contractor, the agency and the road users. Other consequences from failing to accurately locate existing utilities include inadvertent damage to the utility, and thus disruption of services, environmental damage, damage to secondary facilities, economic losses and, most importantly, could put the health and safety of construction workers and the public at risk. Because many utilities are typically located beneath highway rights of way, highway renewal projects are very vulnerable to utility-related delay and disruption.

New and/or improved tools are needed to better locate and identify underground utilities during the preliminary engineering phase of a project, well before construction activities

commence. These tools will make it possible to develop accurate plans that fully consider underground utilities and, by knowing this information early in the project development process, it will be possible to develop effective and cost efficient strategies to protect or relocate the utility or provide alternative service to utility customers if service must be interrupted temporarily.

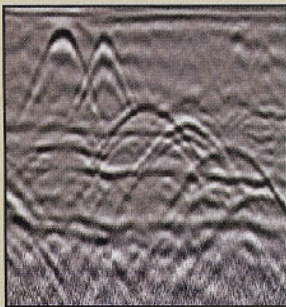
Project Objectives:

1. Survey and document today's utility location and characterization technologies and practices.
2. Identify and prioritize promising technologies for further development, which are expected to directly improve the ability of transportation agencies to locate and characterize buried utility lines.
3. Develop a research roadmap for bringing these emerging or enhanced technologies to the marketplace.

In support of the SHRP 2 research project "Encouraging Innovation in Locating and Characterizing Underground Utilities," the TTC, in cooperation with the Federal Laboratory Consortium for Technology Transfer, is soliciting information on related technology development and future research directions.

To clearly define the technology requirements desired, a State of Need (SON) for advanced technologies that can locate and/or characterize underground utilities has been prepared. This SON updates a similar one issued by the FLC in 1999. Its purpose is to measure the progress of previously identified technologies and to discover new and emerging technologies that could have application to buried utility location (three-dimensional position information) and characterization (utility type, condition/decay and hazard implications).

The SON and information about the project can be found at www.ttc.latech.edu/shrp/son.2007.pdf and responses from researchers and technology providers in this field are encouraged. Any information on potential solutions can be directed to TTC director Ray Sterling at sterling@latech.edu and the submission of potential solutions is requested by June 15, 2007.



GPR Image of Buried Utilities (courtesy of IDS)

TTC Extends Method Selection Software to Rehabilitation and Replacement

Following the successful introduction of the Trenchless Assessment Guide (TAG) software for new installation methods that was developed for the National Utility Contractors Association (NUCA), the TTC is working to expand the international application and scope of this software approach.

Firstly, NASSCO has provided funding to tackle the selection of rehabilitation and replacement methods. The project started this year and is expected to be completed in 2009. Secondly, the TAG software was translated into Spanish by Juan Carlos Gutierrez, a graduate student from Columbia, to allow its use in the Spanish-speaking regions of the world. Thirdly, the TTC is working with the Australasian Society for Trenchless Technology (ASTT) on a Web-based delivery of such software that would allow ASTT members to gain assistance with deciding which of the many potential trenchless methods are suitable for a particular project.

This approach to trenchless method selection is not intended to replace engineering judgment or experience but rather to allow a novice or less experienced person to quickly narrow the field of methods that need to be considered to those that are reasonably capable of doing the work proposed. Key considerations often are site conditions, project access, pipe lengths, diameters and materials, extent of existing pipe deterioration, need for upsizing, etc. Much of the development time for the software comes in the review and adjustment process using an industry review panel in conjunction with the sponsor to make sure that methods are correctly characterized and that the software logic does not exclude appropriate methods.

This software is being developed by John Matthews, Ph.D. student under the direction of Dr. Erez Allouche.

NASTT Student Chapter Travels to 2007 No-Dig Conference

Despite the large distance, the NASTT Student Chapter managed to send six students to the No-Dig Conference in San Diego in April. The student group was made up of Ivan Diaz, John Mathews and Carlos Montes (graduate students) and Cody Crowell, Brandon Reggio and Stacey Smith (undergraduate students). The students met with their counterparts from the other universities with student chapters, had the opportunity to view the exhibition and attend trenchless technology paper presentations and they also assisted with conference support. At the conference, one of the Rain for Rent student scholarships was awarded to Mark Castay (TTC graduate student) who was unable to attend.

The financial support of the NASTT and Carp Construction that allowed the students to participate is gratefully acknowledged.

TTC Research Facility Nears Completion

The signage is going up and the finishing touches are being made by Mann's Construction to the new National Trenchless Technology Research Facility. The main item remaining is the installation of the overhead crane in the high bay space and this is scheduled to occur in June. Once the building contract is complete, the office/seminar/lab area of the building will be occupied and construction of the research soil box and the strong reaction floor inside the high bay space will be able to commence.

The formal building dedication is planned as a gala event for the late fall in conjunction with the annual Industry Advisory Board meeting for the TTC. It is hoped to have all building contributors and present and past IAB members attend the dedication. The TTC again warmly thanks the many industry contributors that have made this building possible.



Industry Advisory Board (IAB)

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