Dear Colleagues and Friends,

We have exciting news from CUIRE headquarters on educational and outreach activities, research projects, and publications. In our last board meeting, held last January in conjunction with UCT 2012 in San Antonio, a new mission and vision for CUIRE was discussed. In the coming months, we will develop new strategic plans to include the following goals:

- Expand the Center supporting base in terms of affiliated industry and infrastructure/government agencies,
- increase visibility through CUIRE Website, conferences, emails, social media, etc.,
- include sustainability issues, pipeline hydraulics,
- develop relationships with local, regional, and national government agencies,
- address regional problems and seek out regional solutions,
- include other focus areas, such as, structural behavior and a new design approach for large diameter water pipeline installations, and
- build an image of quality and competitiveness in all main thrust areas of research, outreach and education.

We need your help and support to work and expand in all the above areas. Please contact CUIRE at 817-272-9177 or cuire@uta.edu with any questions, suggestions, or comments you may have.

We look forward to hear from you!

Warm Regards,

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Texas DOT

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CUIRE to Hold Certification Schools  
Sunday & Monday, January 27-28, 2013, Houston, Texas

More than 30 pipeline professionals from across the U.S., Canada, Italy, and Australia attended CUIRE Schools held last January. Held in conjunction with Underground Construction Technology (UCT), attendees received a full complimentary registration to UCT, and a copy of trenchless technology book. Next year’s Schools include:

- **Sunday, January 27, 2013**
  - **Mud School for Trenchless Technology Methods**: Everything you need to know to properly mix and apply drilling fluids for trenchless applications, including spoil removal and lubrication applications.
  - **Pipe School**: Applications, advantages and limitations of each type of pipe, such as ductile iron, vitrified clay, PVC, HDPE, fiberglass, etc., and new developments in pipe materials and jointing systems.
  - **Geotechnical School**: Geotechnical requirements for both trenchless and open-cut applications. All methods of subsurface explorations, both in the office/lab and in the field, such as utility locating, subsurface utility engineering (SUE), geophysical methods, and geological considerations, and soil boring.

- **Monday, January 28, 2013**
  - **Advanced Horizontal Directional Drilling (HDD) School**: Planning, design, construction, of large, mid and small size HDD projects from inception to closeout and delivery. Includes, tracking and locating, pipe loads, bore planning, and case studies.
  - **Pipe Lining & Replacement School**: Pipe lining (rehabilitation, renewal) and replacement of old and deteriorating pipelines using trenchless technology methods. Includes design, construction, inspection, and QA/QC for CIPP and pipe bursting.
  - **Pipe Jacking and Microtunneling School**: Conventional pipe jacking, as well as pilot tube, microtunneling, horizontal auger boring, pipe ramming, and box culvert applications.
  - **Design and Construction of Large Diameter Pipeline Installations**: Comparison of current and new design principles, use of native backfills, CLSM, cost comparisons, and sustainability issues.

The fee for each daily School will be $495, with registration for two Schools at $795. Special discount is available for government agencies, groups, and early registrations. For more information call CUIRE at 817-272-9177 or Email: cuire@uta.edu.

**New Book: Trenchless Technology Planning, Equipment and Methods**

This is the first detailed guide to planning, equipment and methods for pipeline and utility installation, renewal and replacement using trenchless technology methods. This step-by-step resource explains the basics of trenchless technology planning, how to select the right method, and information on the cost of construction for different trenchless methods. Packed with illustrations, this book covers proper methods for geotechnical investigations, rock mass considerations, tracking and locating, and contracting and procuring. This cutting-edge engineering and construction tool also contains design and construction information on new pipeline installations as well as old pipeline renewal and replacement methods.

**Features:**
- Cost comparison of different pipeline installation, renewal and replacement methods.
- Job planning, scheduling, and setup.
- Description of different pipeline installation methods.
- Description of different pipeline renewal and replacement methods.
- Guidelines for proper design and construction.

For more information and to include your experience, case studies, product and services, contact Dr. Mo Najafi at 817-272-9177 or najafi@uta.edu.
CUIRE joins efforts with China University of Geosciences, Wuhan, and American Society of Civil Engineers (ASCE) to hold the 3rd International Conference on Pipelines and Trenchless Technology (ICPTT 2012). The conference, cosponsored by China-U.S. Joint Center for Trenchless Research & Development (CTR&D), will be held from October 19th through 22nd, 2012, at the Wuhan Science and Technology Convention & Exhibit Center, Wuhan, China. The conference provides a world forum for presentations of papers published in the ICPTT 2012 Proceedings and additional papers to be published in the ASCE Journal of Pipeline Systems Engineering and Practice.

The previous conferences have been a resounding success. ICPTT 2011, held last October in Beijing, included more than 540 participants from various countries such as United States, Canada, UK, Germany, Korea, India, Iran, Japan, Egypt, New Zealand and China. The exhibits had 1,000 visitors and included a heavy construction equipment show. A trenchless technology research colloquium sponsored by the International Society for Trenchless Technology (ISTT) and local industries was held in conjunction with this conference. Dr. Mohammad Najafi presented a welcome presentation and chaired the plenary session on the first day of the conference. Additionally, he presented two technical papers and a one-day workshop on New Pipeline and Trenchless Technology Advances. More than 60 pipeline professionals attended this educational workshop.

**CUIRE Board Meeting was held in Conjunction with UCT 2012**

On January 24, 2012, 15 CUlRE Industry Board Members met in San Antonio, Texas, to hear Mr. David Marshall, Engineering Services Director for Tarrant Regional Water District (TRWD) about a new vision and mission for CUlRE. As a result of his efforts, plans are underway to expand activities into water applications, possibly with setting up a new Center at UT Arlington. CUlRE will be part of this new Center. In this meeting both Mr. Marshall and Mr. Rich Mielke, Engineering Director with Northwest Pipe Company, were recognized for their Distinguished Service to Pipeline Industry.
CUIRE Receives a Fourth Phase to its 3M Research Grant

With U.S. water infrastructure expenditures expected to reach billions of dollars annually, 3M in cooperation with CUIRE, is testing a new water pipe renewal product. The first phase of this research contract was awarded in March 2009; the second phase was announced on July 31, 2009; third phase was awarded on January 2011, and the fourth phase was awarded on April 2012. The cooperation between 3M and CUIRE includes development of design and construction guidelines, specifications, short-term and long-term testing, short-term buckling test, finite element analysis, and field evaluations for the new spray-on product. CUIRE is also helping with development of an ASCE Manual of Practice (MOP) on “Renewal Methods for Potable Water Pipes,” and an ASTM Standard on “Renewal of Existing Potable Water Pipes by Spray in Place Pipe – Advanced Polymer Coatings.”

CUIRE to Complete the Second Phase of an Existing Research Grant from Tarrant Regional Water District (TRWD)

In May 2010, TRWD entered into an agreement with CUIRE to investigate the potential reuse of native soils with or without modifications. CUIRE attended portions of the Value Engineering (VE) workshop held in May 2010 and reviewed the VE report. Subsequently, CUIRE was contacted to provide research on soil reuse, conduct a soil-box test, and perform research on costs, sustainability and real-time monitoring and inspection. In late 2010, CUIRE developed and proposed the soil-box test methodology. CUIRE and TRWD discussed many ideas and eventually decided that a static load test of a 72-inch, DR 240 steel pipe, would provide insights on the use and constructability of native soil embedment. Due to success of the first test, an amendment to the original contract was approved in December 2010 arranging for four additional load tests with alternate embedment materials such as lime stabilized native soils. Based on review of results of the first two tests and recommendations from various stakeholders, the research plan has been further modified to accommodate the 3-dimensional Finite Element Modeling (FEM). Currently, Test #4 is in progress. For performing the tests and selection of specific soil materials, CUIRE collaborated with UT Arlington geotechnical and structural faculty. Below is a description of the tests:

- Test 1: Steel Pipe with Native Soil
- Test 2: Steel Pipe with 6% Lime Modified Soil
- Test 1a: Steel Pipe with Native Soil
- Test 3: Steel Pipe with Granular Embedment
- Test 4: Steel Pipe with 0.3-D Granular Embedment

Other phases of the research includes cost and productivity considerations for different soil hauling scenarios, sustainability considerations of using different pipe materials, evaluation of different real-time inspection and monitoring methods, and cost comparison of different trench excavations. This unique and challenging research is scheduled for completion in August 2012. CUIRE looks forward to work closely with TRWD and other project participants during the pipeline construction. For more information, contact Dr. Najafi at najafi@uta.edu.
CUIRE and Benton Associates Receive WERF Research Grant on Innovation and Research for Water Infrastructure for the 21st Century

CUIRE and Benton Associates, Jacksonville, Illinois, received a research grant from the Water Environment Research Foundation (WERF). The specific project title is "Evaluation of Manhole Rehabilitation Technologies." While manholes are easily accessible, there are more than 2,000,000 manholes estimated to be operational in the U.S. alone, and they offer a variety of challenging problems that are frequently misunderstood and overlooked. Like pipelines, manholes come in a variety of materials and sizes. They are commonly made of brick-mortar, precast concrete, concrete block and cast-in-place concrete. The proposed research will evaluate structural capabilities of common manhole rehabilitation materials by conducting physical testing; and thereby, provide a tool for developing a decision support system for manhole rehabilitation methods and materials.

This project is comprised of the following tasks:
1. Literature search
2. Industry expert workshop (on 10/2/2012 at WEFTEC 2012)
3. Experiments on available and emerging manhole rehabilitation materials
4. Computational modeling
5. Report preparation

All utilities, municipalities and companies involved in manhole rehabilitation products and services are invited to participate in this unique project. The numbers of products that can be evaluated are limited, so early participation is encouraged.

We look forward to working with you on this unique project. For more information contact Dr. Firat Sever, Benton & Associates, Inc. Phone: 217-245-4146, Email: fsever@bentonassociates.com or Dr. Najafi, CUIRE, Phone: 817-272-9177 or najafi@uta.edu.

CUIRE Conducts a National Research Project on Failure Causes and Rates of Large Diameter (24-in. and larger) Water Transmission Pipelines

CUIRE is working on a major project regarding failure modes, causes and rates of 24 in. and larger water transmission pipelines. All types of pipe materials, such as, steel, concrete, PCCP, bar-wrapped, ductile iron, cast iron, PVC, and HDPE are considered. The primary objective of this project is to gain an understanding of pipe material performance under different loadings and operational conditions that may come about due to environmental factors such as erosion, corrosion and so on. Participation from water pipeline owners, municipalities, government agencies, and pipe manufacturers are welcome and encouraged. This participation will enhance the project results and ensure accuracy of findings. All participants will receive a copy of research results. For more information on how to participate, contact Dr. Najafi at CUIRE, Phone 817-272-9177 or najafi@uta.edu.

For More Information Regarding CUIRE: www.cuire.org
The main objective for the North American Society for Trenchless Technology (NASTT) student chapter is to educate and train the graduate & undergraduate students in the field of Underground Construction & Trenchless Technology. In the last academic year, the student chapter participated in the ASCE Pipelines 2011, Seattle, WA, UCT 2012, San Antonio, TX, and a trip to the No-Dig 2012 show in Nashville, TN. Guest speakers included Tim Peterie of Insituform Technologies.

The main objective for Texas Society of Professional Engineers (TSPE) student chapter is to promote professional interests in all disciplines of engineering by developing professional contacts, providing leadership opportunities and encouraging the pursuit of professional goals. Jason Rush of Vermeer Texas-Louisiana and Dr. Rakesh Murthy of The Texas Micro-factory spoke to the students on October 19, 2011 and February 16, 2012.

**Students Attend ASCE Pipelines 2011, UCT 2012 and No-Dig Show 2012**


Twenty students from UT Arlington attended UCT 2012 held in San Antonio, TX. CUIRE thanks UCT for providing the opportunity for students to gain knowledge of underground construction technologies.

Thirteen students from UT Arlington attended NASTT No-Dig Show 2012 held in Nashville, TN March 11—15. The students participated in various activities conducted by NASTT Student Chapter, and Saeed Rahjoo, CUIRE Graduate Research Assistant, presented a paper on “Trenchless Technology Applications for Culvert Installations.” Siavash Motlagh, CUIRE Graduate Research Assistant, presented a poster on “Long-Term Testing of 3M SIPP Polyurea Formulation for Water Pipe Renewal.” Also, during the No-Dig Show, Jose Rojas, a civil engineering undergraduate student received the Rain-for-Rent Scholarship. CUIRE would like to thank NASTT Scholarship Committee and Rain-for-Rent for providing this scholarship.

Additionally, Abhinav Huli, a recent UT Arlington and CUIRE graduate currently with Haley & Aldrich in Bedford, NH, presented a paper entitled, “Accuracy and Predictability of Design Parameters in Horizontal Directional Drilling.” In his presentation, Abhinav described a state-of-the-art program he has developed that combines the computer program Celsius with an Excel spreadsheet. The program is used to monitor drill fluid parameters and model their effect on horizontal drilling behavior and fluid pressures. The paper was extremely well-received by the audience and showcases Haley & Aldrich’s unique capabilities and deep understanding of drill fluid management as well as the horizontal directional drilling practices and design issues. The fact that Abhinav is only 1-1/2 years of out graduate school makes this accomplishment all the more impressive.
Journal of Pipeline Systems Update

Last June, the number of papers for the ASCE Journal of Pipeline Systems – Engineering and Practice, reached 150, which is a milestone, exceeding all the expectations. The Journal editors will meet at in conjunction with ASCE Pipelines 2012 in Miami, to decide on several issues, including organization of upcoming Pipeline Research Workshop, to be held in conjunction with Pipelines 2013 in Fort Worth. For more information on the Journal and the Research Workshop, please email cuire@uta.edu or call 817-272-9177.

ASCE International Pipelines 2013 Conference Update

ASCE Pipelines 2013 held their first kickoff meeting on May 16, 2012 at Worthington Renaissance Hotel, Fort Worth, TX, and the conference location. The objectives of the meeting were to discuss conference program needs, ideas and suggestions, and assign program responsibilities to committee members. The next steering committee meeting will be held in conjunction of ASCE Pipelines 2012 at Miami, FL on August 19, 2012.

This international specialty conference is expected to draw interest from all facets of industry i.e., owners, consultants, academia, contractors, and manufacturers from the U.S., China, and other countries. It is estimated that more than fifty (50) Chinese delegates will attend the Dallas-Fort Worth (DFW) 2013 Conference. Based upon the conference’s subject matter, previous ASCE Pipeline specialty conferences and ICPTT 2009’s success, as well as other industry symposiums, it is expected that DFW 2013 Conference participation will be upwards of 600 pipeline and related professionals with up to 70 exhibitors. A special feature of this conference is allocating a track on oil and gas applications, so participation from this industry is encouraged to increase public relations and present technical issues on gas fracturing and oil drilling. Mr. David Marshall of Tarrant Regional Water District (TRWD) is the honorary chair of this conference. Hope to see all of you June 23 through June 26, 2013, in Dallas Fort Worth, Texas! For more information and updates contact CUIRE at cuire@uta.edu, call 817-272-9177, or contact any of the steering committee members as follow:

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