EMISSION SAFETY

LEARN MORE BY EXPLORING TTC’S REPORT ON CIPP

OTHER NEWS

CIPP emissions study findings / members unite in D.C.
periodicity of sewer inspection / apply for NASSCO scholarships
The Pipeline Assessment Certification Program (PACP®) is the North American Standard for pipeline defect identification and assessment, providing standardization and consistency to the methods in which pipeline conditions are identified, evaluated and managed. The goal of PACP is to have pipeline system owners create a comprehensive database to properly identify, plan, prioritize, manage and renovate their pipelines based on condition evaluation. Developed in partnership with the Water Research Center (WRc) in 2002, PACP is the North American adaptation of the United Kingdom’s TV inspection coding system developed by the WRc.

Over the years PACP has evolved with great input from its many certified professionals. Codes have been added to address new or changing conditions, updates have been made to measurement requirements based on advancements in the technologies used for assessment, new fields were created for information gathering to address growing needs and so on. Since the release of version 7.0.3, we’ve found the need to make more adjustments and improvements to the Program which has resulted in the planned release of version 7.0.4 later this year. Thanks to a thorough audit done by our Training Director, Michael Kerr, and a few others, the training materials are now under peer review by a small group of PACP Trainers. The manual and exam edits are also underway. You will notice changes in 7.0.4 include new and improved photos, clarification of explanations in the text, correction of inconsistencies and rebranding of the documents.

If you would like to be part of the version 8.0 initiative, please be sure you are a NASSCO member, join the Infrastructure Assessment Committee and express your interest. You can learn more at nassco.org/get-involved/join-a-committee.

As always, if you have any suggestions for improvements or changes to the Program materials (manual, training presentations or exams), please share them with us by submitting a review form on the PACP page on nassco.org. This is your tool for assessing the condition of your assets and we want to make sure it’s all you need it to be. We welcome and encourage your input!

“WHILE THE CHANGES ARE NEEDED, THEY ARE NOT MAJOR AND WILL NOT AFFECT THE DATABASE OR SOFTWARE THAT IS USED IN THE FIELD. THOSE CHANGES WILL COME WITH THE NEXT MAJOR RELEASE - VERSION 8.0 - WHICH IS A FEW YEARS OUT.”
On December 17, 2019 The Trenchless Technology Center (TTC) at Louisiana Tech University presented an industry-wide webinar sharing an overview of its CIPP Emission Safety Study Report and Recommendations. The Study, conducted in response to published reports on the safety of emissions used in cured-in-place pipe (CIPP) jobsites, was funded by NASSCO, Inc. in its quest to ensure the safety of workers and our communities.

**PHASE 1**

Phase 1 was a four-month study which focused on the review of published literature pertaining to chemical emissions during CIPP installations using styrene-based resins. The study, completed on April 6, 2018 by researchers at the University of Texas at Arlington (UTA)’s Center for Underground Infrastructure Research and Education (CUIRE), and the Institute for Underground Infrastructure (IKT) in Germany, found that prior studies do not adequately capture worker exposures or levels in the surrounding areas to which workers or citizens may be exposed. The team further determined that spatial variation of concentrations, and variations in concentrations with different meteorological conditions, were not well determined.

**PHASE 2**

Phase 2 of a larger, in-field study conducted by TTC was a year-long study and included measurement of styrene and other organic compounds at multiple CIPP installation sites across the country, representing different pipe lengths and diameters (8-inch, 12-inch and larger), in order to capture variations in emissions. Measurements were conducted before, during, and after curing at the termination manhole, as well as various locations in the surrounding outside area and inside nearby buildings. Worker exposure was also measured via personal exposure monitors. Finally, dispersion modeling was conducted to estimate compound concentrations at different locations for a wide variety of meteorological conditions. Measured and modeled concentrations were compared to appropriate health-based action levels to determine if any potential health risks exist for workers or citizens in the surrounding communities.

The findings were presented via a webinar which was hosted by TTC’s Team PI, Dr. Elizabeth C. Matthews (Civil/Environmental). The Project team included Co-PIs Dr. Shaurav Alam (TTC), Dr. John C. Matthews (TTC), Dr. Sven Eklund (Chemistry), and Graduate Students. TTC’s project partners – from the U.S. Army Corps of Engineers, Engineer Research and Development Center (ERDC) – included Dr. Tony Bednar (Chemistry) and Charles Laber (Chemistry).

“WITH NEARLY 500 PEOPLE IN ATTENDANCE, THE ONE-HOUR WEBINAR GAVE AN OVERVIEW OF FIELD MEASUREMENTS AND SAMPLING, THE DISPERSION MODELING APPROACH, EVALUATION OF HEALTH RISKS APPROACH, OBSERVATIONS AND RESULTS FOR ALL TESTED SITES, AND RECOMMENDATIONS BASED ON FINDINGS. WE ENCOURAGE EVERYONE INTERESTED TO VIEW THE WEBINAR AT NASSCO.ORG/NEWS/CIPP-STUDY (HINT: FAST-FORWARD THE FIRST EIGHT MINUTES UNTIL YOU HEAR THE PRESENTER SPEAK).”

Continued on page 6
75 YEARS of INNOVATION IN ACTION

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TTC’S RECOMMENDATIONS AND CONCLUSIONS BASED ON THE SURVEY DATA INCLUDE:

RECOMMENDATION #1
LINER TRANSPORT TRUCKS AND STORAGE UNITS:
• For those immediately entering the liner transport truck or storage unit, active air monitoring should be utilized at the initial opening of the truck or storage unit door to ensure a safe work environment.
• At the initial opening of the liner transport truck or storage unit door, suitable PPE should be worn by those immediately entering the truck or storage unit.

RECOMMENDATION #2
EMISSION STACK:
• A perimeter of 15-feet should be implemented around exhaust manholes and emission stacks during curing. This perimeter could be entered for short amounts of time not exceeding five minutes. If this area must be entered for longer than five minutes, suitable PPE should be used.
• Emission stacks should be a minimum of six feet in height to enhance the dispersion of emissions and lessen the likelihood of workers entering the perimeter from having to cross into the plume even when wearing PPE.

TTC made further recommendations for future study including focusing on task-oriented worker exposure to emissions to identify certain tasks within the typical eight-hour shift window that could pose health risks; better understanding the dispersion of styrene from the liner truck after opening; and gathering more data to correlate the number of liners being stored on the truck, the liner sizes and the duration the liners have been on the truck with emission concentrations.

NASSCO has made additional, interim recommendations to keep our workers and communities safe:
• Until more comprehensive recommendations are prepared, NASSCO recommends air monitoring by workers entering the liner transport truck or storage unit, either immediately after opening the unit door or after a designated wait time.
• Workers should wear suitable PPE based on the results of the air monitoring when entering the truck or storage unit.

SO, WHAT’S NEXT?
NASSCO’s Technical Advisory Council is working closely with the Association’s Health and Safety Committee to develop and/or modify safety guidelines based on TTC’s findings. Additionally, NASSCO has formed a CIPP Safety Workgroup to develop outreach and consider further research. While NASSCO committees and workgroups are typically open only to NASSCO members, the CIPP Safety Workgroup is an exception as we want all leaders aligned to CIPP technology, including academia, industry and others, to come together to help NASSCO set standards to keep our workers and communities safe. If you are interested in being part of this important workgroup, please contact me at director@nassco.org.

For more information visit nassco.org/news/CIPP-study
QUICK 5-STEP PROCESS

1. CCTV locates defect in pipe
2. Packer and repair sleeve pulled into place
3. Packer inflated and sleeve installed
4. Packer deflated while grout fills void
5. CUES LOCK mechanical sleeve permanently installed

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Email: mfrench@cuesinc.com
Phone: 407.750.0426

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NASSCO’s mission is to set standards for the assessment, maintenance and rehabilitation of underground infrastructure and to assure the continued acceptance and growth of trenchless technologies. This mission is accomplished through education, advocacy and industry resources. One of the most valuable resources are NASSCO’s Specification Guidelines.

Available to the public at nassco.org, NASSCO’s Specification Guidelines help us all do our work with integrity while following best practices. These Guidelines are educational and general in nature, and are not biased towards any company or product, but rather written purely to help sewer professionals succeed. With more in the works through the hard work of NASSCO Committees, currently published NASSCO Specification Guidelines include:

1. **Cross Bore Specification Guideline:** Developed to help municipalities set up a good Cross Bore Detection and Prevention Program, this Guideline includes recommendations on what steps need to be taken to keep our workers, sewers and communities safe from cross bores.

2. **Guideline for The Safe Use and Handling of Styrene Based Resins in Cured-In-Place Pipe (CIPP):** Originally published in 2008 and updated in 2017, this Guideline is being updated again as a result of the Trenchless Technology Center at Louisiana Tech (TTC) field study on CIPP Emissions. The goal is to provide a safe working environment for CIPP workers and to also ensure safety for the public.

3. **Cured-In-Place Pipe Guideline Specification:** The CIPP Guideline provides instructions on how to prepare a technical specification for a CIPP project. It covers both inversion and pull-in installation methods and hot water, steam and light curing methods. It is currently undergoing a general update that will include more information on light cure technologies.

4. **Cured-In-Place-Pipe (CIPP) Lateral Seals Guideline Specification:** The Lateral Guideline provides specification details for rehabilitating house service laterals with CIPP either from a cleanout or pit or from the main sewer. The Guideline covers all installation techniques, including inversion and pull-in.

5. **Smoke Testing Data Dictionary:** Smoke Testing Guidelines are currently being updated to include the latest information about smoke testing and best practices to use for the safety of the workers and residents.
Pressure Testing and Grouting of Sewer Joints, Laterals and Lateral Connections Guideline Specification: This Guideline is intended to assist in the proper bidding and execution of a grouting contract for sewer joints, laterals and connections. The Guideline explains the equipment, products and procedures used in the grouting operation.

Manhole Rehabilitation Guideline Specification: The Manhole Rehabilitation Specification was written to assist municipalities and engineers in writing specifications for a manhole rehabilitation project. It goes into the different methods of rehabilitation and the different uses of each. It also covers the testing and verification of the various products and methods.

Folded Pipe Guideline Specification: This Guideline is designed to help communities that specify the fold and form type of liner. It talks about the products, strengths and properties as well as the proper installation finishing and inspection of the product.

Pipe Bursting Gravity Sewer Mains with HDPE: This supplemental sewer main specification is intended to address the installation of high-density polyethylene pipe for sewer main using pipe bursting methods and technology for sanitary sewer lines. It includes the scope, materials, qualifications and submittals suggested for a pipe bursting project.

Pressure Pipe Guideline Matrix for Selection of Pressure Pipe Assessment Technologies: This Guideline is written to assist engineers and municipalities in choosing the best testing procedures to use in various types of pressure pipe.

Sewer Pipe Cleaning Guideline Specification: This Guideline is written to help engineers and municipalities looking to issue a small diameter (pipes 30” or smaller) cleaning project. The Guideline spells out all steps needed as well as suggested bidding and billing categories. This Guideline was written with the goal of reducing or eliminating change orders.

Pipe Condition Assessment Using CCTV Guideline Specification: This Guideline assists the municipality or engineer that wishes to issue a CCTV project. The Guideline details the steps needed and wording required to produce a good project and was written with the goal of reducing or eliminating change orders.

To download and share the above NASSCO Specification Guidelines please visit https://www.nassco.org/resources/guideline-specs.

“AVAILABLE TO THE PUBLIC AT NASSCO.ORG, NASSCO’S SPECIFICATION GUIDELINES HELP US ALL DO OUR WORK WITH INTEGRITY WHILE FOLLOWING BEST PRACTICES. THESE GUIDELINES ARE EDUCATIONAL AND GENERAL IN NATURE, AND ARE NOT BIASED TOWARDS ANY COMPANY OR PRODUCT, BUT RATHER WRITTEN PURELY TO HELP SEWER PROFESSIONALS SUCCEED.”
Whether you’re a new or an existing NASSCO member it’s important to understand how your membership works and the many benefits available to you.

**HOW IT WORKS:**

NASSCO membership runs on a calendar year. All membership certificates provided throughout the year expire on December 31st unless notified otherwise. New members joining after January will receive pro-rated membership dues.

NASSCO’s membership structure is as follows:

- Contractors: $500 annual fee for up to 5 individuals
- Consulting Engineers: $295 annual fee for up to 3 individuals
- Public Agencies: $295 annual fee for up to 3 individuals
- Suppliers (providers of trenchless equipment, materials or services): $500 annual fee for up to 5 individuals
- Associates (entities aligned with industry but not contractor, consulting engineer or public agency): $250 annual fee for up to 3 individuals
- Individuals (employees of government agencies or educational institutions that are not NASSCO members): $90 annual fee for one individual

Within each individual membership there is a primary member and ancillary member(s). For example, a contractor member would have one primary member and four ancillary members (for a total of five). Although both member types have access to the NASSCO benefits mentioned on the following page, the primary member is considered the main contact for the organization’s membership account. The primary member will therefore receive the invoice for membership dues and all NASSCO communications. He or she will also be listed on the membership directory at nassco.org and be responsible for updating NASSCO on any company or ancillary member changes.

**Things to Remember:**

The number of individuals allowed for each membership type includes the organization’s primary and ancillary members. Beyond the total allowed by category, additional ancillary members may be added to a membership account for $50 each. Once designated as an ancillary member, an individual must remain an ancillary member until the end of the year, unless they leave their organization. In this case, the original ancillary member may be replaced with a new ancillary member.
MEMBER BENEFITS:

- Participation in NASSCO’s dynamic committees
- Networking opportunities
- Discounted publications on Nassco.org
- Exclusive access to performance specifications
- Membership Directory listing on nassco.org
- Training discounts – as a member of NASSCO the primary and ancillary members are eligible to receive discounts for recertification of Pipeline Assessment Certification Program (PACP®) and Inspector Training Certification Program (ITCP®) classes.
- Ability to upload manufacturer specifications into NASSCO’s resource warehouse on nassco.org
- Be featured in a “Meet our Member” article in the NASSCO Pipeline
- Special Member pricing for advertising in the NASSCO Pipeline
- Post on NASSCO.org Job Board
- Be a part of making positive change for our industry

IF YOU HAVE ANY QUESTIONS ABOUT MEMBERSHIP OR THE BENEFITS AVAILABLE, PLEASE EMAIL DAWN@NASSCO.ORG.
On December 10, 2019 I had the unique opportunity to join a delegation of my NASSCO colleagues on Capitol Hill in Washington, D.C. to educate Congress about the important work NASSCO members do in communities across the nation and press for support of the funding and policies that benefit our industry.

Like many of you, I had only heard about how Congress works through the media and my eighth-grade civic class, so this trip was eye opening and inspiring. I found that we have real and impactful influence on national policymaking when we make an effort to talk to Congress. They really listen and want to know more about underground water and wastewater infrastructure and what can be done to make communities grow and be safe.

Of the nine NASSCO members who participated, we had 18 meetings, including meetings with the important senior committee staff that consider all water-related legislation. The NASSCO staff organized the day by breaking us into three groups of three or four NASSCO members. Each group was scheduled ahead of time to meet with staff members for the Senators or Representatives from their home states.

I was in a group with NASSCO President-elect Joe Schotthoefer and NASSCO Government Relations Committee Vice Chair Chase Dehne. All three of us are Michiganders, so we had meetings with the offices of Senator Debbie Stabenow and Senator Gary Peters, as well as Rep. Debbie Dingell (Chase’s Congresswoman), Rep. Andy Levin (Joe’s Congressman) and Rep. Tim Walberg (my Congressman). We also had a joint meeting with the democratic and republican staff of the House Water Resources Subcommittee, which is the subcommittee with jurisdiction over the Clean Water Act and Clean Water State Revolving Fund.

By the end of the day, our group had six meetings and they were all fantastic. The people we met with had a lot of interest in the work NASSCO’s members do in their congressional districts. NASSCO developed a short video for us to play at the start of each meeting which gave a quick overview of who NASSCO is, what the members do, and the federal policy recommendations we were there to meet about. I encourage you to watch the short video at nassco.org/get-involved.
We also discussed many important policy recommendations during our meetings, but our discussions about funding and enforcement were most important to me personally and resonated with the congressional offices. Without funding, the required infrastructure repairs simply will not happen. Without adequate and documented enforcement of the required specifications, the work completed by contractors or municipalities might be subpar, resulting in premature failures, possible health and safety risks, and wasted funded dollars.

HR 1497, the Water Quality Protection and Jobs Creation Act of 2019, in the House of Representatives will address both of these concerns by boosting funding for the Clean Water SRF and federal funds to support state enforcement of the Clean Water Act. The bill will also maintain funding for the new CSO, SSO, and stormwater collections and conveyance grant program that NASSCO championed the creation of in 2018. Companion legislation to HR 1497 is expected in the Senate as part of the next Water Resources Development Act in early 2020, so in our congressional meetings we spoke about NASSCO’s support for these policies and how communities will benefit.

You too can support increased funding and become an engaged advocate for federal policies that will benefit our industry by going to the NASSCO Sewer System Heroes grassroots advocacy page and sending letters to your Members of Congress at nassco.org/government-relations. While there you can also download NASSCO’s official policy recommendations to better understand the condition of our infrastructure and what NASSCO proposes for the ongoing inspection, maintenance and repair of our critical water and wastewater systems.

“My compliments to NASSCO for organizing such a unique and important opportunity. I urge all NASSCO members to participate in a future NASSCO Capitol Hill Day because this is your chance to help give back to our industry and ensure we have federal policies and funding that protects communities and helps them grow.”
At NASSCO’s membership meeting last September, long-time member and Past President of NASSCO’s Board of Directors, Mike Hogan of Duke’s Root Control, asked “When will CMOM be updated?” This question started a train reaction which led to an invitation by the EPA for NASSCO to participate in a review of the Capacity, Management, Operation and Maintenance (CMOM) EPA Guidance document.

Thanks to former NASSCO Board member Jimmy Stewart of Xylem, Inc. and NASSCO’s Government Relations Consultant, Steve Dye, NASSCO is now part of a workgroup tasked with helping to develop an MOU between the EPA and WEF; providing technical support and case studies; supporting an update of the CMOM document to provide new information as the industry continues to adopt new approaches to the inspection, maintenance and repair of failing underground infrastructure; and to review and provide comments on the draft document while serving as a member of the technical committee. How will this work get done? Through NASSCO’s Infrastructure Condition Assessment Committee, headed up by Chair and Board member Michelle Beason.

This is just one example of the power and influence behind NASSCO’s many dynamic committees. This year alone, through NASSCO’s Pipe Rehab Committee, a major industry study was conducted to measure the safety of emissions during the cured-in-place (CIPP) process. The findings of this study will impact our industry for years to come. See page 4 for more information.

Also this year, NASSCO’s Lateral Rehabilitation Committee worked extremely hard to address UPC 715.3 which states that trenchless technologies may not be used in the replacement of cast iron pipe. This fight continues, but without NASSCO’s commitment through its Committee and individual members like Joanne Carroll, Kaleel Rahaim and Tom Bowman, our voice would not be heard.

These examples just scratch the surface. NASSCO’s Government Relations Committee has made major strides in Washington, D.C.; NASSCO’s International Relations Committee is expanding PACP® throughout South and Central America; NASSCO’s Pressure Pipe Committee continues to explore coding of pressure pipe conditions, and so much more.

NASSCO is making a huge impact on our industry through the dedication of the people who roll up their sleeves and do the heavy lifting through our many Committees by using their knowledge, experience and commitment in a spirit of cooperation. The ultimate goal is to help NASSCO achieve its mission to set standards for the assessment, maintenance and rehabilitation of underground infrastructure and to ensure the continued acceptance and growth of trenchless technologies.

To see a full listing of NASSCO committees and to learn more, please visit https://www.nassco.org/get-involved/join-a-committee.
GraniteNet is the next generation condition assessment software for the water/wastewater industry. GraniteNet software is asset based, which enables the software to easily interface with other asset based software products such as ESRI ArcGIS Mapping systems, and asset management systems to include Cityworks, Infor Public Sector (Hansen), IBM Maximo, and others. Intuitive and easy to use, data and video can now be accessed via a web portal.

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NASSCO staff has settled nicely into the new office in Frederick, Maryland. This past December we had the privilege of hosting NASSCO members, trainers and our executive committee for a special holiday party.

Please make note of our new address and phone number and stop by to visit us when you are in the D.C. or Baltimore areas.

5285 Westview Drive, Suite 202 - Frederick, MD 21703
(301) 624-2400
WHAT IS THE RECOMMENDED PERIODICITY OF SEWER INSPECTION OF LARGE DIAMETER INTERCEPTORS?

BY CHRIS MACEY, P. ENG., TECHNICAL ADVISORY COUNCIL MEMBER

NASSCO’s Technical Advisory Council (TAC) was formed, in part, to provide unbiased, knowledgeable and robust answers to industry questions. One such question came in from NASSCO member Jeff Griffiths of Hydromax, USA just before the holidays: “What is the recommended periodicity of sewer inspection for large diameter interceptors?” The TAC came together to provide Jeff with the most comprehensive direction possible, and we want to share that information with the rest of the industry.

Generally, the TAC believes a preferred sound, risk-based asset management approach is one that balances Consequence of Failure (CoF) and Likelihood of Failure (LoF) considerations. The PACP® Manual (Version 7), Appendix D presents a risk-based approach to asset management; though there are many valid prioritization models for defining critical assets, the principles are readily adaptable to all sewer systems.

The WRc Sewerage Rehabilitation Manual (SRM) has utilized a risk-based approach since the early 1980s to determine inspection frequency based on structural drivers and the criticality of the pipe. In the WRc model, inspection frequency varies based on the last observed structural condition (LoF) and the criticality or CoF of the pipe asset. The WRc definition of high, medium and low criticality assets designate pipes as Category A, B, and C, respectively. While their rating system to assign classification is prescriptive, it aligns well with standard North American Risk Models.

ASCE MOP 62 similarly endorsed the WRc approach (Existing Sewer Evaluation and Rehabilitation: WEF Manual of Practice No. FD-6 ASCE/EWRI Manuals and Reports on Engineering Practice No. 62, Third Edition) long before WRc root structural codes were converted to what we now know as PACP. Based on this, a typical reinspection matrix could be similar as presented below, with a structural performance grade per PACP grading standards:

<table>
<thead>
<tr>
<th>STRUCTURAL PERFORMANCE GRADE</th>
<th>HIGH CRITICALLY</th>
<th>MEDIUM CRITICALLY</th>
<th>LOW CRITICALLY</th>
</tr>
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<tbody>
<tr>
<td>5</td>
<td>★</td>
<td>★</td>
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<tr>
<td>4</td>
<td>1 YEAR</td>
<td>5 YEARS</td>
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<td>20 YEARS</td>
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<td>5 YEARS</td>
<td>20 YEARS</td>
<td>25 YEARS</td>
</tr>
<tr>
<td>1</td>
<td>10 YEARS</td>
<td>25 YEARS</td>
<td>30 YEARS</td>
</tr>
</tbody>
</table>

Note: ★Where rehabilitation is not planned in the immediate future sewer condition should be monitored frequently to prevent unanticipated failure.

Note, the WRc Structural Performance Grades are directly analogous to the maximum score in a PACP Structural Quick Rating, so the table can be directly utilized with WRc as well as PACP structural rating protocol. As PACP evolved from the WRc “root” language, the severity of Grade 5, 4, 3, etc. codes have the same ramifications in terms of LoF. Note that these recommended frequencies are based on structural grades only and are well founded in terms of sound engineering judgement based on the balance of the risk model and considerable study in the UK of sewer collapse risk from structural defects.

Continued on page 18
WHAT IS THE RECOMMENDED PERIODICITY OF SEWER INSPECTION OF LARGE DIAMETER INTERCEPTORS?

O&M related defect observations (deposits, grease, roots, infiltration, etc.) need their frequency assessed in a more empirical manner based on a solid understanding of the root cause of the defect and local system studies of the effectiveness of various O&M approaches. They have far more variability than the most common structural defect mechanisms and vary widely from system to system. As their severity is still measured on a common scale in terms of the impact of the specific O&M defect on sewer function, they will still benefit from the same form of risk-based assessment rationalization in terms of varying the frequency of reinspection based on a balance of the last observed O&M condition and the criticality of the asset. As many O&M related defects can impact the rate of structural deterioration, an integrated approach that considers both ratings is prudent.

A further consideration are regulatory drivers that may stipulate system inspection and maintenance requirements to minimize occurrence of Sanitary Sewer Overflows (SSOs). These are often documented in formal Management, Operation and Maintenance (MOM) plans. For example, the State of North Carolina issues a System-wide Collection System Permit that requires the permit holder to develop MOM-based strategies to assess cleaning and condition assessment needs that promote a well-managed sewerage collection system. For perspective these permits require the following:

- Proactively clean 10% of the system each year. Preventative cleaning is not required for sewer lines less than five years old unless inspection otherwise reveals the need for cleaning, or cleaning is required by a sewer line extension permit.
- Regular (risk-based) inspection to reduce the SSOs. Proper documentation includes logs or summaries of MOM activities.
- Identification and increased frequency inspections of high priority lines (i.e. aerial line, sub-waterway crossing, line contacting surface waters, siphon, line positioned parallel to stream banks that are subject to eroding in such a manner that may threaten the sewer line, or otherwise designated as high priority) at minimum six-month intervals.

“BOTTOM LINE IS THAT REGARDLESS OF CITED SOURCES THE INDUSTRY STANDARD OF QUALITY IS A RISK-BASED PROGRAM THAT FOCUSES RESOURCES AT THE HIGHEST CRITICALITY ASSETS TO REDUCE SSOS. SO, WHETHER YOUR PROGRAM IS DRIVEN BY STRUCTURAL CONSIDERATIONS OR O&M RELATED DEFECTS, OR IT IS DRIVEN BASED BY PURE REGULATORY COMPLIANCE, THE BEST ROAD MAP TO GET THERE WILL BE SYSTEMATIC INSPECTIONS WITH THE FREQUENCY DRIVEN BY SOUND RISK-BASED CONCEPTS.”

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Tell us a little about you – how did you end up in this industry? I have been involved in buried pipeline assessment and trenchless renewal as a consultant since my very first project assignment—a smoke testing assignment, of all things—as a field engineer in 1976. Since that time, my career has included several hundred pipeline renewal projects and programs throughout the U.S., Canada, Europe, East Asia, and New Zealand. Nearly every one of these assignments have included tools and technologies to inspect, evaluate, and rehabilitate buried pipeline assets.

Tell us about your company. BlueWater Solutions Group is a consulting engineering firm that serves clients in the municipal, industrial, and federal/military market sectors. These services focus on the use of both established and advanced inspection and assessment technologies to better assess, prioritize and implement best-case solutions for renewing aging, buried pipelines (gravity and pressurized).

Why did you join NASSCO? I actually had every intention of joining NASSCO back in 1990 and managed to put it off until last year when, during lunch with a good friend and colleague, he said “Wade, if you don’t join NASSCO next month, I’m going to do it for you and send you a bill. Your chronic procrastination on the matter is, frankly, an embarrassment to us in the trenchless industry”. So, I finished my chicken salad sandwich, paid the server, went back to the office, and sent in my application for membership!

What are the top challenges facing our industry? How are we going to tackle the ever-declining condition of our nation’s water transmission and distribution infrastructure network, which is now estimated to be trending north of $500 billion in identified renewal and replacement needs? I have strong thoughts and opinions on how I think we can turn the corner, but it would certainly exhaust the space available in this one-page questionnaire.

How should NASSCO help address this issue? Regarding water infrastructure, I believe there needs to be a closer collaboration with AWWA. The recently published AWWA M77 manual for “Condition Assessment of Water Mains” is a good start, and NASSCO should help elevate and inform matters associated with standardization of pipe inspection codes for pressure pipe. In fact, I’m currently assigned as a member of a newly formed NASSCO subcommittee to develop PACP codes for pressure pipeline systems. That’s a good start and will require a close collaboration with AWWA to leverage some or all of these tools for the water market.

How has being a NASSCO member helped your career or business? For 30 years NASSCO has been a high-value resource and for us in terms of access to industry colleagues and an on-going knowledge center to us for technologies, specialty contractors, and vendors. Along with others in the late 1970s and early 1980s, I believe we have gotten remarkably better at identifying critical buried pipeline assets, putting sensible prioritized programs together, and getting them fixed for the next 50 years or more. Collectively, I think we’re making good progress, but there’s more work to do.

What else should other NASSCO members know about you? We like to think of ourselves as a group that enjoys being engaged at the outer edges of both established and developing technologies to find a better/cheaper/faster way of identifying and fixing crappy pipe.
GIVING BACK

NASSCO SCHOLARSHIPS

NASSCO believes in giving back. We also believe in the encouragement and support of new professionals entering the field of underground construction by offering a variety of scholarship opportunities.

Honoring and memorializing industry leaders who paved the way for others to enter and benefit from important careers in our industry, NASSCO Scholarships include:

The Jack Doheny Memorial Training Scholarship: Named after a leader in the proper assessment and cleaning of sewer pipes, this scholarship is for industry professionals wishing to become PACP® or ITCP® certified.

Eligibility: Applicant must be active in the industry.
Application: nassco.org/scholarships
Deadline: No Deadline.
Awarded: Training Scholarships are awarded throughout the year, based on availability and merit.

The NASSCO Jeffrey D. Ralston Memorial Scholarship: Gone way too soon at the young age of 34, Jeffrey was a dedicated and highly-contributing NASSCO member who recognized the importance of education in the pursuit of careers in trenchless technology.

Eligibility: Applicant must be a currently-enrolled college student who is a relative or dependent of a NASSCO member or has worked actively in the industry and is sponsored by a current NASSCO member.
Application: nassco.org/scholarships
Deadline: March 1st
Awarded: Mid-April

The David Magill Memorial Scholarship: Named after one of NASSCO’s greatest supporters and influencers of grouting technology, this scholarship, funded by NASSCO, is awarded through Virginia Tech University where Mr. Magill graduated and served as class President in 1965.

Eligibility: Applicant must be a student currently enrolled in the Water and Wastewater Group at Virginia Tech University with a focus on Trenchless Technology.
Application: Eligible students should contact Virginia Tech University directly for application, deadline and award information.

“EDUCATION, ALONG WITH INDUSTRY RESOURCES AND ADVOCACY, IS ONE OF THE KEY AREAS NASSCO SUPPORTS TO BECOME THE SOURCE IN SETTING STANDARDS FOR THE ASSESSMENT, MAINTENANCE AND REHABILITATION OF UNDERGROUND INFRASTRUCTURE AND ASSURING THE CONTINUED ACCEPTANCE AND GROWTH OF TRENCHLESS TECHNOLOGIES. WE HOPE TO CONTINUE EXPANDING NASSCO’S SCHOLARSHIP PROGRAM AND LOOK FORWARD TO SUPPORTING MANY YOUNG PROFESSIONALS THIS YEAR!”
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The NASTT 2020 No-Dig Show – owned by the North American Society for Trenchless Technology and planned with the help of Benjamin Media, Inc. – is a trenchless celebration that expertly combines professional and high-quality education and exhibits with fun and entertaining networking opportunities over the course of the five-day event.

This annual conference brings together trenchless professionals from across the industry to help maximize their investment in trenchless technologies, services and applications. The 2020 conference is expected to attract over 200 exhibitors and more than 2,200 attendees who represent public works, contractors, engineers, utility owners, damage prevention and industrial facility personnel.

The NASTT No-Dig Show blends education and technology through its topnotch Technical Program, which features over 160 peer-reviewed, high-quality technical papers, as well as opportunities for Continuing Educations Units (CEUs). The topics focus on both the trenchless installation and rehabilitation industry.

The conference includes an Exhibit Hall and special networking events including a Kick-Off Breakfast, Gala Awards Dinner, NASTT’s Hall of Fame Induction, the 19th Annual Education Fund Auction and Reception and Closing Luncheon.

You can plan your NASTT 2020 No-Dig Show experience, learn about the networking events, view speaker information and connect with other attendees by using the official 2020 mobile event app.

For more information about the NASTT 2020 No-Dig Show visit www.nodigshow.com, email conferences@benjaminmedia.com or call 330-467-7588.

Note: NASSCO looks forward to the induction of its Technical Director, Lynn Osborn, P.E., into the NASTT Hall of Fame during the 2020 No-dig Show.
TRAINING CALENDAR

FEbruary
PACP
2/25-2/27 Winter Haven, FL
2/25-2/27 Hollywood, FL
2/25-2/27 Montecito, CA
2/25-2/27 Chesapeake, VA
2/26-2/28 Baton Rouge, LA

PACP 1-Day Recert
2/25 Pittsburgh, PA

ITCP-CIPP
2/25-2/26 Chesapeake, VA
2/27-2/28 Seattle, WA

march
PACP
3/3-3/5  Pittsburgh, PA
3/3-3/5  Denver, CO
3/3-3/5 Independence, OH
3/3-3/5 Santa Cruz, CA
3/9-3/11 Frederick, MD
3/10-3/12 Pullman, WA
3/10-3/12 Kansas City, MO
3/10-3/12 Phoenix, AZ
3/10-3/12 Lawrenceville, GA
3/10-3/12 Orlando, FL
3/16-3/18 Timonium, MD
3/17-3/19 Raleigh, NC
3/17-3/19 Lebanon, NH
3/18-3/20 Frisco, TX
3/23-3/25 Wichita Falls, TX
3/24-3/26 Durham, NC

ITCP-CIPP
3/11-3/12 Santa Rosa, CA
3/11-3/12 Evansville, IN

ITCP-Manhole Rehab
3/3-3/4 Houston, TX
3/11-3/12 Kansas City, MO
3/17-3/18 Evansville, IN

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PACP
4/6-4/8 Laurel, MD
4/7-4/9 Fresno, CA
4/7-4/9 Lawrenceville, GA
4/7-4/9 Springfield, IL
4/14-4/16 Hartford, CT
4/14-4/16 Evansville, IN
4/15-4/17 Columbus, OH
4/27-4/29 Sacramento, CA
4/28-4/30 Carmel, IN

ITCP-CIPP
4/14-4/15 Pinellas County, FL

ITCP-Manhole Rehab
4/2-4/3 Gainesville, FL
4/15-4/16 Pinellas County, FL

GO TO NASSCO.ORG TO VIEW THE FULL SCHEDULE
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