



Spring 2016 Newsletter

President's Message:

Happy Spring New Hampshire Public Works Association members and colleagues. What a busy Spring it is lining up to be, too. Along with being honored by the NH DOT Commissioner Victoria Sheehan, our March Spring Technical Meeting provided an excellent presentation by StreetScan and their unique van that does complete assessment of pavement. In this newsletter, you will read about the Town of Rye's experience with this method, including the financial commitment (page 9).

May is packed with extremely powerful and educational events happening in New Hampshire, and in New England. NH PWA is very excited about our upcoming Annual Meeting, May 5th at the Derryfield Country Club in Manchester. NH DES Commissioner Thomas Burack is our featured keynote speaker. Our Slate of Officers and Directors will be officially voted on at this meeting, by our members in attendance, so make sure you are there to cast your vote. Later in the day, we are hosting a Golf Tournament to benefit the Public Works Employee Memorial. Join us on the eighteen-hole regulation golf course also at the Derryfield Country Club (see pages 2 & 3 for more details). Not a golfer? Another way to support the Public Works Employee Memorial is to climb aboard our fundraiser Harbor Cruise out of Portsmouth on June 10th. More details can be found on page 5.

May 22nd – May 25th brings the 2016 APWA North American Snow & Ice Conference to our doorstep in Hartford, Connecticut. This is a National event and is hosted by the New England Chapter of American Public Works Association! At the conclusion of the Snow & Ice Conference is the New Hampshire Road Agents Association's 29th Annual Mountain of Demonstrations at Mount Sunapee, May 26th!

Public Works and all its factions have stepped up their game in training and education. All events tie into the educational tract for our public works employees and colleagues alike. From legislative issues to best practices, equipment upgrades to technological breakthroughs, the public works community is in the know. Proudly, NH PWA is directly linked with many of these events and conversations. Whether it be on the Mountain with Road Agents, in the classroom with a Technology Transfer Center (T²) program or in the field with an engineering consultant, our Board represents well.

It has been a true privilege to have been President during this 2015-2016 year. As Bruce Temple (City of Lebanon) steps up as President, Scott Kinmond (Town of New Durham) assumes the President-Elect position, and Lisa Fauteux enters the Officers' side of the table as Secretary/Treasurer, our Association is in a fantastic leadership position. I will be working in the background as Immediate Past President. I will be supporting the agenda we have mapped out during my tenure, with our special focus on MEMBERSHIP.

I hope to see you at many of the events this season, for I will be at all of them! "Life begets life. Energy creates energy. It is by spending oneself that one becomes rich." Sarah Berhardt.

Stay Safe,
Catherine Schoenenberger
President, NHPWA 2015-2016



**NH PUBLIC WORKS
ASSOCIATION**

Annual Meeting

May 5, 2016

You are invited to join the New Hampshire
Public Works Association's Annual Meeting

We are happy to present NH DES Commissioner Thomas Burack as a featured
speaker!

The Annual Meeting is an opportunity for discussion and education of important and relevant topics pertaining to Public Works. The topics to be presented will follow an Environmental theme, with an emphasis on drinking water and the reduction of salt used in snowstorms. The NHPWA Annual Meeting will be held at lunch.

A Golf Tournament to benefit the Public Works Employee Memorial of New Hampshire will be held immediately following the Meeting.

Schedule

Cost:
\$50 for Members
\$60 for Non-members

8:30 - 9:00 Registration & refreshments
9:00 - 9:15 Welcome
9:15 - 12:30 Topics & Discussion
12:30 Lunch
12:45 - 1:30 NHPWA Annual Meeting

Location:

Derryfield Country Club
625 Mammoth Road
Manchester, NH 03104

Please register online through the T2 system at <http://www.t2.unh.edu/nhpwa-registration>

Annual Meeting Golf Tournament

*to benefit the NH Public Works Employee Memorial**



**NH PUBLIC WORKS
ASSOCIATION**

Derryfield Country Club

625 Mammoth Road

Manchester, NH

Thursday, May 5, 2016

Registration begins at 1:30pm
(following the Annual Meeting)

Tee Offs begin at 2:00pm



The Derryfield Country Club is a regulation public golf course (currently 9 holes due to construction) established in 1932. It is one of the only three municipally-owned golf courses in the State of New Hampshire.

Hole & Tee Sponsorships: \$100 includes location sign (*payment is required by 4/29/2016*)

Team Registration: \$190 includes 4 player team for a 9-hole game and 2 cart rental (*payment required prior to tee time*)

Individual Player: \$50 includes 9-hole game and cart rental (*payment required prior to tee time*)

Reserve your sponsorship or tee time by completing and returning the form below.

For questions contact either:

Carl Quiram (603) 703-1166 cquiram@hoyletanner.com or

Amy Begnoche (603) 862-1362 amy.begnoche@unh.edu

**In remembrance of all the public employees who have died in the course of performing their public duties, the New Hampshire legislature has made it possible for us to create a memorial honoring their dedication and sacrifice. It is our hope that we will soon be able to break ground on a memorial that commemorates New Hampshire's dedicated municipal and state workers.*

Please register online at <http://t2.unh.edu/nhpwa-registration>, by sending the following information via email to amy.begnoche@unh.edu or via fax to (603) 862-0620, or mail to the address listed below.

Contact Name:

Players' Names: 1.
2.
3.
4.

Organization:

Street Address:

City:

State:

Email:

Phone:

If sponsoring a Hole/Tee, requested Hole / Tee:

Make checks payable to: New Hampshire Public Works Association

Please send checks to: NH Public Works Association
c/o UNH Technology Transfer Center
33 Academic Way
Durham, NH 03824

NH PWA Mission:

To be a highly visible professional organization that provides leadership to enhance the ethical, technical, administrative and educational development of all public works matters throughout the State of New Hampshire with the goal to enhance the overall service provided to the citizens of the State of New Hampshire.



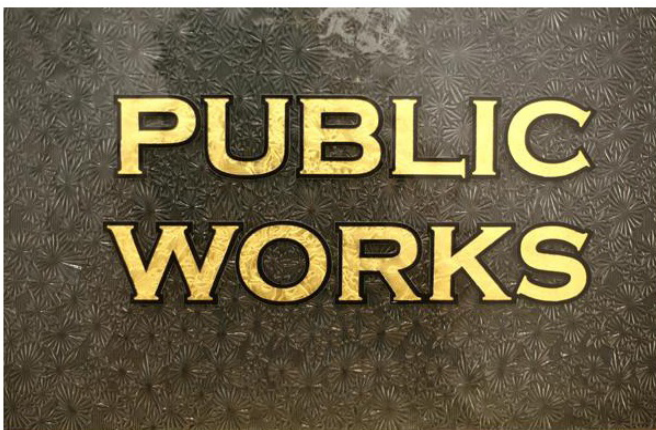
2016 SHOW for SNOW

NORTH AMERICAN SNOW CONFERENCE

2016 APWA North American Snow Conference
The Premier Event in Snow & Ice Management
May 22-25, 2016
Connecticut Convention Center, Hartford, CT
Hosted by the APWA New England Chapter
www.apwa.net/snow

The 2016 Snow Conference in Hartford will bring together more than 1,500 snowfighters from every corner of the winter maintenance community. Public, private, rural, metropolitan, domestic, international – they're all sure to be there at the Show for Snow! The 2016 Conference features an exhibit floor packed with the newest equipment and products, quality education programs and technical tours, and opportunities to exchange ideas with manufacturers, distributors, consultants and other public works professionals. Its four days of winter training and networking you can't afford to miss out on!

For attendees the 2016 Snow Conference has it all – from expert-led snow and ice education sessions to an exhibit floor full of excited vendors who can't wait to show you the latest winter maintenance solutions your community's been looking for. Make plans today to join your peers in Hartford for the Show for Snow in 2016





Harbor Cruise & Social Event

*to benefit the NH Public Works Employee Memorial**

Isles of Shoals Steamship Company

**315 Market Street
Portsmouth, NH 03801**

Friday, June 10, 2016

Boarding at 4:45pm

Departing at 5:00pm

Returning at 7:00pm



We will be boarding the MV/Challenger for a two hour sightseeing cruise during Market Square Day weekend. This private charter vessel carries 100 passengers around Portsmouth Harbor and the Piscataqua River for an evening with live entertainment, friends and laughter. Hors d'oeuvres will be served and a cash bar will be available. Cruise ends early enough to grab dinner with friends in Portsmouth. Free parking available at the docks for cruise.

Tickets are \$60 each and sponsorship opportunities are available.

A block of rooms has been set aside at the [Sheraton Portsmouth Harborside Hotel](#) through May 15, 2016 for \$249 per night. Reservations can be made by calling (603) 431-2300 and referencing *New Hampshire Public Works Association*.

For questions contact either:

Carl Quiram (603) 703-1166 cquiram@hoyletanner.com or

Amy Begnoche (603) 862-1362 amy.begnoche@unh.edu

**In remembrance of all the public employees who have died in the course of performing their public duties, the New Hampshire legislature has made it possible for us to create a memorial honoring their dedication and sacrifice. It is our hope that we will soon be able to break ground on a memorial that commemorates New Hampshire's dedicated municipal and state workers.*



Harbor Cruise & Social Event Registration:

Please register online at <http://t2.unh.edu/nhpwa-registration>, by sending the following information via email to amy.begnoche@unh.edu or via fax to (603) 862-0620, or mail to the address listed below.

Name: _____

Organization: _____

Street Address: _____

City: _____ State: _____

Email: _____

Phone: _____ # of Tickets: _____

Harbor Cruise Sponsorship Opportunities:

For sponsors, payment is required by June 1, 2016.

_____ **Gold** - \$500 includes 2 tickets to the event

_____ **Silver** - \$250 includes 1 ticket to the event

_____ **Bronze** - \$100 (tickets not included)

Contact: _____

Organization: _____

Street Address: _____

City: _____ State: _____

Email: _____

Phone: _____

Make checks payable to: *New Hampshire Public Works Association*

Remit payment to: New Hampshire Public Works Association
c/o UNH Technology Transfer Center
33 Academic Way
Durham, NH 03824

Bowstring Bridge In Claremont, a Rare Example in Engineering

by John C. Vancor, PE

Vice President/Principal Engineer, Hayner/Swanson, Inc.

Every community has features of interest to members of the Public Works profession. Features could include quirky or historically significant structures such as unique bridges, dams or buildings. Other features could include facilities such as past or present parks and athletic facilities, treatment plants and utility systems. Others may include constructed features to manage stormwater or harness the power potential of rivers and streams.

In this and future Newsletters, we want to highlight some of these features. Our hope is to provide background information on a feature you may have seen, or perhaps to draw your attention to a feature which you may want to visit.

Within the Monadnock Mills historic district in Claremont, NH, is a unique bridge which spans the Sugar River. This graceful river crossing, constructed in 1870, is a wrought iron, tubular bowstring bridge. This bridge provided access for workers traveling to and from work. It also provided support for steam and gas piping between the mill buildings on one side and the gas works on the other.

The Monadnock Mills sawmill was located immediately adjacent to the bridge on the Millyard side. It is believed that the bridge also provided a means for moving milled lumber from the mill side to the other for shipping.

This bowstring bridge, with distinctive arches which resemble an archer's bow, was manufactured by the Moseley Iron Building Works in Massachusetts. Thomas W. H. Moseley, founder of the company, patented the design of this bridge, as well as the design of innovative machinery needed to roll the iron plates during the manufacturing process.

At the time, bowstring bridges were a popular bridge type. Sadly, few examples remain. The Monadnock Mills Bridge is one of only three in New England, and is the only one in its original location.

To visit the bridge, park at the Claremont Visitors Center at 14 North Street. Exploring the paths and trails offers interesting views of the bridge, as well as the Monadnock Mills historic district. This district contains one of the most complete and best preserved nineteenth century textile complexes in the state.

Click these links [for more information about this bridge](#), including [details of the structure](#). Also, additional information about the [Monadnock Mills district](#) is available.

Thanks to Nancy Merrill, Director of Planning and Development for the City of Claremont, as well as Colin Sanborn, Circulation Librarian at the Fiske Free Library for their assistance with this article.

If you have suggestions of other features of interest which could be considered for future columns, please email John at jvancor@hayner-swanson.com.



Photo taken by Marc N Belanger in May 2012

2016 ACEC Engineering Excellence Awards

Alex Koutroubas, Executive Director, ACEC-NH
Dennehy & Bouley

On March 17 the American Council of Engineering Companies of New Hampshire (ACEC-NH) announced the winners of the 2016 Engineering Excellence Awards (EEA) Competition. The program recognizes projects of engineering achievement by New Hampshire consulting engineering firms. Entries are judged on the basis of engineering excellence, the degree to which the client's needs are met, and the benefits to the public welfare and private practice of engineering.

There are 14 projects in 7 categories from 12 different member firms. As is typically the case, public projects dominate the list (11 out of the 14), most of the owners are municipalities but one owner is a federal agency and one is a state agency. We also have three private sector projects. All but two of the projects are located in NH. Three of the projects are directly related to Water Treatment Plants for cities. There are four bridge projects and one dam project. There are also three studies/consulting projects on airports, oil tanks and compressed natural gas fueling flammable vapor release. We also have a project that was the replacement of the failing range towers that aid the Miami Main and Government Cut Channels and the Hooksett/Bow rest area redevelopment project.

ACEC-NH wishes to thank all the firms who took the time to submit projects for consideration. We also thank our EEA Judges for their thoughtful review of all of the submittals.

DuBois & King was the Overall Winner & Structural Systems Winner signifying the year's most outstanding engineering achievement for the Laconia, NH Main Street Bridge Rehabilitation.

VHB won the Special Projects category for the I-93 Service Areas Redevelopment in Hooksett & Bow, NH.

McFarland Johnson won the Surveying and Mapping Technology category for the NH Statewide Airport System Plan.

Stantec won the Transportation category for the Slayton Hill Road Reconstruction in Lebanon, NH.

HEB Engineers won the Small Projects category title for Stark Covered Bridge Rehabilitation located in Stark, NH

Wright-Pierce won the Waste and Storm Water category for the Wastewater Treatment Facility - Dewatering and Grit System Upgrades in Nashua, NH.

DuBois & King won the Water Resources category for the Robin Hood Dam Rehabilitation in Keene, NH.

Appledore Marine Engineering, LLC won an Outstanding Achievement Award for Replacement of the Government Cut & Miami Main Channel Entrance Ranges in Miami, FL.

CLD Consulting Engineers, Inc. won an Outstanding Achievement Award for Manchester Street Bridge Replacement in Nashua & Merrimack, NH.

The 2016 Overall Winner & Structural Systems Winner signifying the year's most outstanding engineering achievement for the Laconia, NH Main Street Bridge Rehabilitation.

DuBois & King



Continued to page 12

StreetScan in Rye, NH

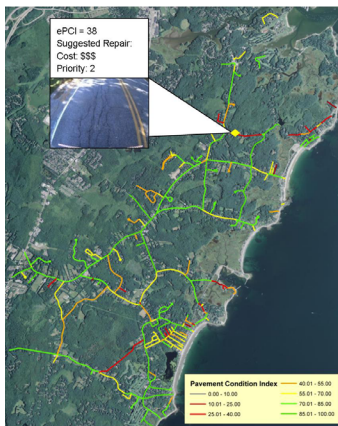
by Dennis McCarthy
Director of Public Works
Town of Rye



A two-day joyride over 86 miles of road with StreetScan's ScanVan resulted in a data driven pavement management program for the Town of Rye, NH. The "ScanVan" is equipped with multi-sensor road scanning technology that inspects every lane it drives over. It outputs actionable information on the town's pavement infrastructure that town officials use to make repair decisions. StreetScan ranked every road in the Town of Rye from 0 (worst) to 100 (best) based on ASTM's pavement evaluation indices. Within weeks StreetScan prioritized road maintenance projects based on their condition, traffic, and long-term benefits.

Automated Pavement Evaluation

StreetScan's van is equipped with a suite of sensor systems propagating acoustic, optical, and electromagnetic waves. These sensors produce objective data on pavement texture, roughness, cracks, and a variety of distresses (e.g. potholes). PaveMon, StreetScan's online GIS system, makes all these data accessible through the web. With a click on the map, user can review pavement condition ratings along with pavement images, suggested repairs, and estimated repair costs.



StreetScan's patented technology was developed through a five-year research program at Northeastern University, funded by an \$18 million grant from the National Institute of Standards and Technology. By leveraging modern sensing and big data technologies, StreetScan makes infrastructure health monitoring affordable and efficient, allowing municipalities to make informed decisions to maximize the use of our tax dollars. Boston Globe, Fast Company, and CBS are among the many that recognized StreetScan's potential for addressing this chronic problem of our crumbling infrastructure.

First scan in New Hampshire

StreetScan found the overall score of roads in Rye to be 69, a decent network condition compared to other scans StreetScan has performed. With the StreetScan results, selectmen now have objective data to turn to when residents request roadway improvements.

Indeed, the available budget greatly outpaces roadways deterioration. By following StreetScan's improvement program the Town of Rye will be able to increase their overall pavement condition each year, justify increases in their repair budgets or request additional funding, reduce damages to the vehicles, decrease car crashes, and enhance the town's image.

StreetScan Inc.

StreetScan Inc. is Northeastern University Spin-off Company located in Burlington, MA. They provide an end-to-end pavement inspection and management service to the public sector that is fast, affordable, and objective, ensuring that municipalities never make repair decisions based on outdated or incomplete pavement condition data. www.streetscan.com. For further information on StreetScan's services, contact them at info@streetscan.com or call (617) 399 8236.



Moultonborough's DPW Director Selected as New Durham's new Town Administrator

In January 2016, Scott D. Kinmond of Moultonborough, NH was selected from a field of 34 applicants to serve as Town Administrator for the Town of New Durham. "I believe this position will provide a great opportunity for me to assist the New Durham community to build consensus and work towards a common vision," Kinmond said. Kinmond looks forward to working with the Board of Selectmen, elected officials, Department Heads and the New Durham residents.

Mr. Kinmond grew up in Ossipee, NH and graduated from Kingswood Regional High School in Wolfeboro, NH. He attended several professional development and certification graduate programs; NH Police academy, NE Command Institute at Babson College, Master Road Scholar II at the UNH's T² Center, and Certified as a Public Supervisor (CPS) and will complete his studies in May 2016 as Certified Public Managers (CPM) at the NH Bureau of Training & Education in Concord, NH.

Prior to coming to New Durham, he was the elected Public Works Director / Highway Agent for the Town of Moultonborough, a position he had held for nearly 7 years. During this time period he also served for a little over five months as the Town's "Administrative Liaison" in the interim period between the departure of its former Town Administrator and the hiring of a replacement.

Prior to being the DPW Director, he had a successful 24 year career in Law Enforcement rising through the ranks at the Moultonborough Police Department from Patrol Officer to the position of Chief of Police in which he served for eleven years. During his 30+ years of municipal service, he also served the public in numerous other areas ranging from a Deputy Sheriff with the Carroll County Sheriff's Office (4 yrs.), Fire Captain (12 yrs.), and elected Commissioner (9 yrs.) for the Ossipee Corner Fire Precinct. During his career he has had the good fortune to serve on many boards; He is a founding member of the Child Advocacy Center of Carroll County where he has served on the Board of Directors for 10 years with five of those as its President. He currently serves as the Secretary / Treasurer of the NH Public Works Association, and a member of the Police Cadet Academy committee for the NH Association of Chiefs of Police. He is also a past Master of Red Mountain Lodge #68, F&AM, of Center Sandwich, NH. He enjoys the outdoors, especially the ocean and spending time with family and friends.

Mr. Kinmond continues to serve as the Town of Moultonborough elected Road Agent during the Town's transition to select a new DPW Director. He lives in Moultonborough with his wife Anne and two daughters Kayla & Meghan.

Congratulations, Scott!

This issue of the NHPWA newsletter was edited by Stephanie Cottrell, Training Coordinator, UNH T² Center

Indemnification

by John C. Vancor, PE

Vice President/Principal Engineer, Hayner/Swanson, Inc.

This column is another in a continuing series of articles intended to foster better understanding between municipalities and consultants. NHPWA has reached out to members and will continue to reach out regarding specific aspects of consultants' practice which seem to lead to misunderstandings or disagreements. The hope is that with further discussion, future disagreements can be avoided.

During contract negotiations between a municipality and a consultant, it is not unusual for the specific-language used in contract terms to present concerns to one or both parties. A common example includes provisions in the contract for one party to indemnify the other for certain potential liabilities.

It is understandable that a municipality may want clarity that the consultant will be responsible for liabilities which may be caused by negligence on the part of the consultant. However, it seems reasonable to expect that the consultant should only be responsible to the extent to which their own negligence has caused liabilities and damages.

It would be unreasonable to expect that the consultant be held responsible for liabilities which result from the negligence of others over which the consultant has little or no control. Yet, many standard indemnification clauses do exactly this.

A clause that requires the consultant to indemnify a client for claims caused "in whole or in part by the consultant" leaves the consultant responsible even if the claims were largely caused by actions of others including the client. For example, if a municipality decided to accept an alternate material suggested by a contractor during construction, the consultant could be considered wholly responsible for potential claims resulting from this change even though the decision was beyond their control.

As further illustration, suppose during construction a contractor claims that one aspect of the consultant's design is too difficult to construct as detailed. The contractor offers an alternative and even offers a cost savings to the municipality. The municipality chooses to accept this proposal. The wording of an indemnification clause could leave the consultant with responsibility for any claim resulting from the municipality's own decision and action.

Sometimes proposed indemnification clauses go even further and require the consultant to defend their client. This could establish an obligation to retain an attorney for the client and to pay all costs associated with the client's defense before the consultant's possible negligence has even been demonstrated. Consultants are cautioned by insurance professionals that such requirements to defend the client are not covered by the consultant's professional liability insurance. Potential costs for providing defense for the client might easily exceed the total project fee and may be borne entirely by the consultant.

Brett Gough of Ames & Gough serves many design professionals as a specialty insurance broker. Brett advises his clients to carefully review any indemnification clauses. He suggests that consultants point out to their clients that these clauses are unnecessary. Consultants are already responsible to perform without negligence and if they fail to do so, clients already have recourse. If an indemnification clause is required in the contract, Brett recommends that the consultant request that the indemnification be limited to applying to the extent to which the consultant's own negligence is at fault.

Finally, Brett advises consultants not to accept a responsibility to defend others. Such clauses not only set up a potential conflict of interest in the effort for the consultant to defend themselves as well as their client, but can also lead to large expenses which will not be covered by liability insurance.

continue on page 13

ACEC Engineer

continued from page 8

Stantec won an Outstanding Achievement Award for the Sagamore Avenue Bridge Replacement in Portsmouth, NH.

Tighe & Bond won an Outstanding Achievement Award for the Concord Water Treatment Plant Chemical Process Improvements in Concord, NH.

ACEC-NH wishes to acknowledge the 2016 EEA Honorable Mentions:

Comprehensive Environmental Inc. for the Kingston Water Treatment Facility in Kingston, MA.

S.W. Cole Engineering, Inc. for the Home Heating Oil Tank Inspection Program in Rochester, NH.

GZA GeoEnvironmental, Inc. for the Compressed Natural Gas Fueling Flammable Vapor Release Evaluations in Pembroke, NH

Calendar

May 22-25, 2016: North American Snow Conference, Hartford, CT

May 26th, 2016: Mountain of Demonstrations, Sunapee, NH

June 9th, 2016: Emergency Preparedness Conference, Manchester, NH

June 10, 2016: NHPWA Portsmouth Harbor Cruise Returns! *see page 6 for more info*

Ultra-Violet Trenchless Technology

Aids Storm Drain Repair Beneath Manchester-Boston Regional Airport

by Peter Goodwin
Ted Berry Company

Situated in the heart of New England, Manchester-Boston Regional Airport is located less than 50 miles north of Boston. The airport property encompasses approximately 1,200 acres of land. Located under a general aviation taxiway, approximately 700 ft. of 12-and 15-in. aging concrete storm drains needed rehabilitation. Airport construction poses various challenges. Storm drains located under an active general aviation taxiway proved to be a unique site constraint. One priority was that the solution have no impact on the environment and the downstream waterway.

Storm drains often are extensive networks of underground pipe and structures used to convey storm water away from roadways, residential and commercial areas, and impervious surfaces. Storm drain rehabilitation is challenging for utility owners and operators because they are often located in areas that are not easily accessible.

The Ted Berry Co. was called upon to provide a solution to rehabilitate the storm drains below this taxiway. The project team—President Matt Timberlake, Utility Construction Manager Isaiah Bean and Trenchless Services Manager Shawn Ready—evaluated the site and the unique characteristics of the project, including the existing pipe conditions, the long-term structural design of the storm drains, and the challenging logistics associated with working on and near an active airport.

Due to the requirements for long-term structural pipe design and the job site complexities, a fully trenchless solution was the logical solution for this rehabilitation problem. Because it could be installed through existing manhole structures, cured-in-place pipe (CIPP) was chosen and approved as the best option for this project. CIPP offers a trenchless option, without the need to excavate (open cut) and it met the conditions of the project site.

The project team chose Reline America's ultraviolet (UV) CIPP Alphasliner due to its ability to be designed with structural properties that could exceed the potential loads associated with the site and minimal disruption to the job site, and to be installed using trenchless technology, which prevented unnecessary impact to the site and its users. Its design characteristics encapsulate

Continued to page 13

Trenchless Tech.

continued from page 12

the composite materials during delivery, installation and curing, thus reducing the impact to the site and environment.

The rehabilitation project began in November 2015. New England weather in the fall can range from 60°F and sunny to 20°F and snowing; it was essential that the approach be able to be completed in a short timeframe, limiting both impact to the airport and its users as well as avoiding potential weather delays. A critical part of the planning process was developing a site plan that maximized the efficiency of the rehabilitation team while limiting disruption to the users.

The project team had three main pieces of equipment on site to perform the work. A Vactor combination cleaner was staged to remove debris from the pipe in preparation for lining. The UV CIPP equipment consisted of a blower truck and a UV cure truck. Equipment was set up at the opposite ends of the pipe segment being rehabilitated and was in place for less than one shift to complete the total line segment rehabilitation.

Preparation of the existing pipe included removal of hardened grout at the pipe joints. A water-driven turbine cutter was utilized and the existing pipe was jetted to remove any foreign materials. This allowed the new CIPP liner to have a smooth and full pipe inside diameter and maximized the hydraulic capacity of the storm drain. Using the Quality Tracker System, a pre-CCTV inspection was performed to document the condition of the pipe just prior to lining. The Alphaliner was installed using a pull in place method (ASTM F2019). Once the liner was pulled into place from the manhole to the outlet and fully inflated, the UV light train was inserted into the liner.

The camera on the light train then was used to inspect and record for quality assurance. The liner composite, which consists of a fiberglass and resin system, is activated and cured utilizing the UV light from the light train. One of the benefits of the UV curing system is that no water or steam is used. When the curing is complete, the line is ready to be put into service, with no makeup or curing water to dispose of and no effect on the downstream waterway.

The liner's composite materials are fully encapsulated in a protective inner and outer barrier, which protects the material from becoming contaminated. The encapsulation prevents contamination from groundwater, the weather

or residual material in the pipe during the installation. Upon completion of the installation and cure, the ends of the pipe were terminated in the existing manhole structures.

The entire project was completed in just four days, and 100% of the work was performed through the small 24-in. manhole openings in the airport surface, providing a true no-dig solution. "The challenges associated with a project like this seem to energize our crew, and it is rewarding to see how a dedicated group of people can employ technology to solve a problem like this and literally leave no trace that we were on site," Timberlake said. "A successful project like this only continues to reinforce the value of trenchless technologies in our society."

Indemnification

continued from page 11

Concerns about indemnification clauses often lead to significant discussion and sometimes disagreement during contract negotiations. Needless to say, the last thing a consultant wants to do is start a new project with a disagreement over contract terms. However, legal and insurance professionals caution consultants that the language of these clauses could lead to onerous and unreasonable levels of liability and exposure to tremendous potential risk beyond what either the consultant or their client may realize.

If you wish to comment on this column, or have topics you would like considered for future columns, please email John at jvancor@hayner-swanson.com.

Become a member of the NHPWA!

\$25 for Individual membership

\$100 for Group membership; Group includes entire Public Works/Engineering Department, firm or business.

To download the membership application form and to learn more about the NHPWA go to

www.t2.unh.edu/nhpwa

NHPWA Board Members

President	Catherine Schoenenberger	Stay Safe Traffic Products, Inc.	staysafetraffic@aol.com
President Elect	Bruce Temple	City of Lebanon	bruce.temple@lebcity.com
Treasurer/Secretary	Scott Kinmond	Town of New Durham	nhadmin@metrocast.net
Past President	John Trottier	Town of Londonderry	jrtrottier@londonderrynh.org
Public Sector Representative	Peter Rice	City of Portsmouth	prrice@cityofportsmouth.com
Public Sector Representative	Lisa Fauteux	City of Nashua	fauteuxl@nashuanh.gov
Member at Large	Dennis McCarthy	Town of Rye	dmccarthy@town.rye.nh.us
Member at Large	Carl Quiram	Hoyle, Tanner & Associates	cquiram@hoyletanner.com
New England APWA Representative	Kurt Blomquist	City of Keene	kblomquist@ci.keene.nh.us
NH Water Pollution Control	Peter Goodwin	Ted Berry Company	peter.goodwin@tedberrycompany.com
NH Water Works Assoc. Representative	Bill Boulanger	City of Dover	b.boulanger@doover.nh.gov
NHDOT Representative	Nancy Mayville	NHDOT	nmayville@dot.state.nh.us
NH LTAP Representative	Amy Begnoche	NH LTAP	Amy.Begnoche@unh.edu
NHDES Representative	Keith DuBois	NHDES	keith.dubois@des.nh.gov
Municipal Management Assoc. of NH Rep.	Bill Herman	Town of Auburn	bill.herman@comcast.net
NH Road Agents Representative	Richard Lee	NH Road Agents	nlhd@tds.net
ACEC Representative	John Vancor	Haynor/Swanson, Inc.	jvancor@hayner-swanson.com
ACEC Representative	John Kubeczki	Cardno ATC	john.kubiczki@cardno.com
NH Public Works Mutual Aid Representative	Kurt Grassett	Town of Hancock	hwydept@hancocknh.org
NH Primex Representative	David Witham	Primex	dwitham@nhprimex.org