

Sharing News and Information for State and Local Government and the Development Industry

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R.A. Smith National is performing dye water flooding (testing) in the City of Wauwatosa, Wis. as part of the City's efforts to evaluate the performance of their sanitary and storm sewer systems.



R.A. Smith National is conducting a sign retroreflectivity study in the Village of Fox Point, Wis. to assist the Village in meeting new U.S. Federal Highway Administration requirements.

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R.A. Smith National

*Beyond Surveying
and Engineering*

Locations

Brookfield, Appleton, WI
Orange County (Los Angeles), CA
Tarentum (Pittsburgh), PA

About R.A. Smith National

R.A. Smith National, Inc., is a multi-disciplinary consulting engineering firm. The company is a leader in civil engineering, surveying, construction services, ecological services, geographic information systems (GIS), landscape architecture, water resource engineering, visualization and 3D laser scanning. R.A. Smith National serves state and local government, and the development industry nationwide.

City of Wauwatosa Thinks Green

When you think about all of the green initiatives that surround us, you don't expect to see a creek or river filled with green water. But that's exactly what you might see if you are in the city of Wauwatosa or another community that is conducting dye water flooding this summer.

Dye water flooding (testing) is one of several proactive steps communities are taking to evaluate their sanitary and storm sewer systems in an effort to improve performance. It's part of a green approach that prevents failing systems and basement backups.

R.A. Smith National has provided dye water flooding on more than 150,000 lineal feet of sanitary sewer for the City of Wauwatosa with plans to complete another 50,000 lineal feet by the end of the year. The City's goal is to quantify the total amount of clearwater that is infiltrating the sanitary sewer system, due to exfiltration from the storm sewer, and identify what methods are needed to remove the unwanted water. Recommendations to correct the deficiencies involve both public and private property repairs.

Dye water flooding is a process in which a non-toxic bright colored dye is added to a manhole or catch basin while the storm sewer system is being manually flooded



Non-toxic bright colored dye is added to a catch basin while flooding the storm sewer as part of the dye water flooding process.

with a hose. The manhole or catch basin is filled to street level to simulate a storm event that has reached the design capacity of the storm sewer.

The intense water pressure forces the dye into what may otherwise be invisible defects. The defects are identified with the use of closed circuit television (CCTV).

Once the process is complete, the dye water is released from the sewer system into a nearby creek. The data that is collected is analyzed and recommendations are made for improving the system.

Dye water flooding is just one of several steps communities can take as part of a Sanitary Sewer Evaluation Study (SSES). An SSES is a formal program of investigation work encompassing dye water flooding, manhole and structure inspection, smoke testing, CCTV and flow monitoring. R.A. Smith National has extensive experience in conducting all of these steps in many communities throughout southern Wisconsin.

More Information

For more information regarding dye water flooding or conducting other aspects of a Sanitary Sewer Evaluation Study, please contact [Chris Stamborski](#), P.E., 262-317-3337, project engineer in the Municipal Services Division at R.A. Smith National.



When the dye water flooding process is complete, the dye is released into a nearby creek.

Project Briefs

STH 50 Kenosha, Wisconsin

Providing design services to the Wisconsin Department of Transportation for improvements to increase safety and improve traffic flow at the STH 50/I-94 interchange. The reconstruction project consists of converting a four-lane rural divided roadway into a six-lane urban divided roadway; replacing the I-94 bridges over STH 50 to provide adequate vertical clearance; widening the bridges to accommodate an eight-lane interstate; I-94 on/off ramp reconstruction; a new grade separation at 71st Street to provide a new connection for businesses east and west of I-94; new storm sewer along STH 50 to eliminate flooding problems; and the acquisition of right-of-way and temporary grading easements.



East Avenue Waukesha, Wisconsin

East Avenue, from Sunset Drive to College Avenue, is a 1-mile, 2-lane urban road through a mostly residential neighborhood. The heavily used thoroughfare runs between downtown Waukesha and a retail area on Sunset Drive. The pavement on East Avenue is rapidly deteriorating and the roadway is poorly drained. The purpose of the project is to replace the deteriorated pavement, improve the safety and drainage of the roadway, evaluate roadway improvement alternatives and bicycle accommodations, and reconstruct sidewalk ramps to current ADA standards. East Avenue travels through two historic districts so care will be taken to maintain the historic character of the area.

Simon Coddington Mall Santa Rosa, California

Providing site engineering services to Simon Property Group for a new BJ's Restaurant, which includes two new mall entrances, on-site ADA parking lot improvements and on-site public sanitary sewer, electrical distribution and water main extensions.

Simon Brea Mall Maintenance Brea, California

Providing site engineering services to Simon Property Group for parking lot maintenance improvements including parking lot striping, ADA improvements, public access to mall entries and pavement rehabilitation.

Hawk's Meadow Pewaukee, Wisconsin

Provided sitework engineering and surveying to Naturquest 2000 Development for this 2011 MBA Parade of Homes site. The project is a 28-lot single-family subdivision on 26 acres. Design services included site layout, platting, grading, erosion control, public streets, storm sewer, sanitary sewer, water main, storm water management, bio-retention, landscape architecture, and endangered species preservation. Coordinated the approval process with city, county, and state review agencies, including WDNR and WisDOT permitting.



Imperial Neighborhood Park Brookfield, Wisconsin

Provided master planning and site design for the development of this 13-acre park located in the center of one of Brookfield's older established subdivisions, Imperial Estates. The improved neighborhood park, tentatively set to be constructed in 2012, will offer several passive and active recreational upgrades including a play structure, a multi-use playfield, small parking lot, paved trails, a sledding hill and picnic areas.

Equitable Gas Company Jefferson Hills Borough, Pennsylvania

Provided sitework engineering and surveying services to Equitable Gas Company, LLC. EQT is the Appalachia's largest exploration and production company for natural gas and other energy products. Services were provided for a new training building; the rehabilitation of an existing 800-square foot building to be used for training simulation; and three open field simulation areas.

Project Briefs

CostCo Pewaukee, Wisconsin

Providing construction staking services to D.F. Tomasini for utility installation for this new retail store.



Springs at Heritage Lakes Lincoln, Nebraska

Providing sitework engineering for 140 units in Phase 1 and as many as an additional 44 units in Phase 2 at this multi-family residential project. The first phase will include 41 detached garage stalls; a 1,400-square-foot clubhouse; a dog park; and a swimming pool.

South Fayette Intermediate School South Fayette, Pennsylvania

Completed a Surface Water Investigation to determine the jurisdictional boundaries of wetlands and streams for a campus expansion project that includes a new intermediate school. R.A. Smith National is working with the architect to minimize impacts to the environmental resources.



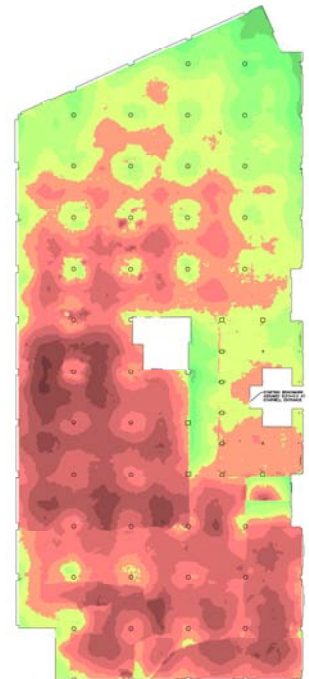
I-43 Sheboygan County, Wisconsin

Providing construction administration services for this \$14.5-million project. The project began in 2010 with three concrete overlays and the construction of four crossovers. The crossovers were constructed in order to move the I-43 traffic to bidirectional traffic during the construction of eight new structures. Six of the eight structures are scheduled to be built in 2011 and two in 2012. Two existing structures over I-43 will have deck replacements. The project also involves four lanes of asphaltic surface on an 8-mile stretch. The entire project is anticipated to be completed by August 2012.



Sinai Community Institute Chicago, Illinois

Provided 3D laser scanning services as part of a multi-phase, build-out project. As part of The Sinai Tomorrow Project, the then vacant third floor of the SCI building was to be built out and actively utilized. Provided laser scanning services for this 27,000-square-foot space, to aid Walsh Construction in the build-out process. Deliverables included a 2D as-built CAD model, as well as a 3D surface representing the existing floor slab conditions, which had been damaged and neglected by the building's previous occupants. The 3D surface was used to create a graphic exhibit showing the floor elevations, while at the same time enabling Walsh Construction to very accurately estimate the volume of leveling compound needed to repair the floor.



Do Your Signs Measure Up?

New sign retroreflectivity requirements by the U.S. Federal Highway Administration are prompting communities to take a closer look at how they maintain their street signs. Agencies must regularly evaluate the nighttime performance of their signs and replace signs that do not meet minimum required retroreflectivity levels.

R.A. Smith National recently assisted the Village of Fox Point, Wis. in completing a retroreflectivity study to determine which signs need to be upgraded, and to develop a sign management program that meets the new requirements of FHWA's MUTCD (Manual on Uniform Traffic Control Devices).

R.A. Smith National's GIS project manager Kyle Belott, GISP, has developed a customized, mobile signage inventory data management application specifically for this purpose. ESRI ArcPad software is used to assure full ESRI data compatibility with the Village's current ESRI GIS system.

In June R.A. Smith National's Kyle Broadrick and Jon McAnally travelled throughout the Village — one on a bicycle and one on a Segway — capturing data for approximately 1,700 signs. Following are the steps taken to collect the needed data for each sign:

1. A GIS-enabled data collector is used to record the sign's location, sign type, facing direction, message and sheeting material.
2. The sign dimensions and ground clearance height are measured and the information is recorded.
3. A weatherproof self-adhesive tag with a unique identification number is applied to the back of each sign.
4. A digital photo is taken of each sign and attached to the inventory data.

After completing this first phase of data collection, the signs are evaluated for acceptable retroreflectance according to the MUTCD standards. R.A. Smith National uses the completed GIS inventory to distinguish between the engineering grade signs made of materials that clearly cannot meet the retroreflectance standards and those that are newer and constructed of materials with greater retroreflectance. A number of additional factors are considered to make these distinctions including type



R.A. Smith National's Kyle Broadrick and Jon McAnally collected data for more than 1,700 signs in the Village of Fox Point. [View video at www.youtube.com/karenwiesneski](http://www.youtube.com/karenwiesneski).

and color of each sign, sign face direction, age of the sign based on installation dates and others.

A second phase of field inventory is conducted for those signs made of retroreflective materials that may be in compliance. This work involves measuring the retroreflectivity of each sign, distinguishing those with greater sun exposure from those that were mounted in shadow and determining their anticipated remaining useful life.

Once the field inventory is completed, R.A. Smith National uses the data to develop a retroreflectivity plan. The program provides guidance in the following areas: recommended sign

replacement program necessary to comply with the January 2015 and January 2018 deadlines; scheduling the continued replacement of signs after new MUTCD requirements are initially met; recommendations of signs that are required and those which may be redundant and considered for elimination; estimated replacement cost forecasts on an ongoing annual basis; and life-cycle cost estimates based on various other factors.

Do Your Signs Measure Up?

For more information or assistance developing a signage retroreflectivity program that meets the new MUTCD requirements, please contact [Jeff Mazanec](mailto:Jeff.Mazanec@rasmith.com), P.E. at (920) 731-8397, ext. 3406.

Compliance Schedule

January 2012 — Agencies must develop a sign maintenance program that addresses new minimum sign retroreflectivity requirements.

January 2015 — Agencies must meet retroreflectivity requirements for all red or white "regulatory" signs, yellow "warning" signs, and green/white "guide" signs.

January 2018 — Agencies must meet new retroreflectivity requirements for overhead guide signs and all street name signs.

Visitors Enjoy New Landscape Design, Improved Access at Summerfest



This year's Summerfest crowd enjoyed new landscape features and improved access at the south entrance to the Henry Maier Festival Park in Milwaukee.

R.A. Smith National recently completed the site landscape plans for Phase One of the new South Gate, Briggs & Stratton Big Backyard Stage and Marcus Amphitheater forecourt at Henry Maier Festival Park.

R.A. Smith National worked collaboratively on the design team with Eppstein Uhen Architects, Milwaukee

World Festival, Inc., Hunzinger Construction Company and a large, multi-disciplinary team of engineers, contractors and consultants to integrate the landscape and hardscape plans early and throughout the overall design process.

The new design includes a new entryway, improved/expanded parking areas, bus loading areas, bicycle parking, entry plazas and raised planters, new performance areas and improved pedestrian-scale site amenities. Large trees were incorporated into the design

to provide an immediate landscape impact for the park.

Tom Mortensen, RLA, has been working on projects with Summerfest for the past 10 years. Design work for Phase Two is scheduled to begin immediately and will be completed in time for the grand opening of the 45th anniversary of Summerfest in 2012. Collectively, Phase One and Phase Two projects encompass approximately 22 acres of the 75-acre site.

Flood Control Improved at Pewaukee Lake



This summer there are some obvious and some not-so-obvious improvements at Pewaukee Lake in the Village of Pewaukee, Wis. If you drive along Wisconsin Avenue or stop to visit Pewaukee Lake Beach, you will notice many of the site enhancements designed by R.A. Smith National's landscape architecture team. What you will not see is the "behind-the-scenes" design efforts of the firm's water resources specialists to increase the spillway capacity of the dam and improve flood control.

Both of these efforts were critical to improving flood control as Pewaukee Lake is a valuable natural resource and a popular destination for the thousands of people who visit the lake every summer to swim, fish and attend various civic events such as a weekly water ski show.

In addition to beautifying the beach and parkland areas, the landscape improvements were an important element in stabilizing the shoreline for erosion and flood control purposes. Landscape features included decorative stone piers, shoreline/riparian improvements, native plantings along the edge of the lake and other site amenities.

The native plantings were designed in groupings/drifts to create a bold splash of color and texture along the water edge, while maintaining lake views and pedestrian access to the water for fishing. Interpretive signs were installed to educate the public about the benefits of the native plants and their role in habitat improvement and erosion control.

R.A. Smith National's water resources specialists developed alternative conceptual designs that were evaluated in accordance with WDNR NR333 requirements. Hydrologic-hydraulic analyses were conducted based on the flood insurance study data as well as the team's prior experience in preparing the dam failure analysis and mapping the hydraulic shadow downstream of the dam.

Successful application was made for a WDNR grant toward increasing the dam outlet capacity. Larger outlet culverts and a larger control gate were designed and the top of the dam was raised. Assistance was also provided to the Village in preparing an Inspection, Operation & Maintenance Plan and an Emergency Action Plan.



Employee News



Paul Schafer, P.E., has joined R.A. Smith National's Brookfield, Wis. office as Construction Division Group Manager. He has more than 11 years of construction management experience.

At R.A. Smith National Schafer is responsible for directing and coordinating construction services for municipal and private development projects. He is also responsible for scheduling a staff of more than 30 construction services professionals.



Pete Brothers, P.L.S., has been promoted to Survey Manager at R.A. Smith National's Tarentum, Pa. office. He has practiced surveying for more than 20 years with experience in all facets of the industry, ranging from ALTA/ACSM Land Title Surveys and the use of state-of-the-art surveying equipment to 3D laser scanning.

Pete has diverse experience in industrial/nuclear facilities, gas/oil industries, transportation, U.S. Dept. of Agriculture (U.S. Forest Service), utility corridors, mall/retail development and more.

Ribbon Cut at CTH X, Waukesha, Wisconsin



R.A. Smith National celebrated the opening of County Highway X in the city of Waukesha, Wis., with representatives from Waukesha County, the City of Waukesha and Wisconsin Department of Transportation at an August 9 ribbon-cutting ceremony. Cutting the ribbon (left to right) are Dan Vrakas, Waukesha County Executive; Richard Smith, president, R.A. Smith National; Jeff Norem, construction services project manager, R.A. Smith National; and Jeff Scrima, Mayor, City of Waukesha.