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*Consulting Engineers*  
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**MUNICIPAL NEWS**  
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# Infiltration/Inflow

## Are you ready for the next big rain event?

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If your community is committed to reducing I/I, a proactive approach will work best! Baxter & Woodman, Inc. can help develop a systematic approach tailored to your system. Proactive planning provides the best opportunity to quantify and locate I/I in your system in a cost-effective manner. Proactive planning includes having your maps ready, flow meters in place, equipment and workforce identified, and a definite action plan to follow.

Locating and removing I/I is not an easy task, but adopting a pre-planned approach and preparing for wet weather opportunities will go a long way toward making your program a success.

Baxter & Woodman, Inc. has assisted a number of communities with planning and conducting successful I/I reduction programs. For more information on developing a program for your community, or if you need assistance with flow monitoring, I/I investigation, or completing a sewer rehabilitation project, contact Eric Murauskas at 815.459.1260 or [emurauskas@baxterwoodman.com](mailto:emurauskas@baxterwoodman.com).

# MUNICIPAL News

## CHEMICAL AND WATER SECURITY ACT HEADS TO SENATE

**T**he potential impact of the Chemical and Water Security Act of 2009 on water and wastewater utility operations is great. The House of Representatives passed the Chemical and Water Security Act of 2009 bill (H.R. 2868) in November of 2009 and the bill has now been forwarded to the Senate for approval. The intention of the bill is to strengthen security at America's chemical plants and drinking water and wastewater facilities by establishing risk-based and reasonable security standards for these critical assets. It authorizes the U.S. EPA to establish updated security programs for drinking water and wastewater facilities.

If H.R. 2868 is passed by the Senate as the bill is currently written, it will directly impact water and wastewater treatment operations and processes. Public water systems serving populations greater than 3,300 and wastewater treatment works that have a treatment capacity of at least 2.5 million gallons per day will need to:

- Establish tiered, risk-based performance standards for security, including conducting a vulnerability assessment,
- Develop site security and emergency response plans for each system, and
- Provide annual training to employees

H.R. 2868 authorizes the primacy agency to designate any chemical substance as a substance of concern and designate the threshold level for that contaminant for the vulnerability assessment.

*The chemical causing the most concern is gas chlorine.* If regulators determine that a facility using chlorine is in one of the two top high risk tiers, the bill gives them the authority to order a utility to change its disinfectant chemicals.

What's next? Baxter & Woodman is prepared to assess your operations and processes. We will continue to monitor the Senate review of this bill and provide information on our website, [www.baxterwoodman.com](http://www.baxterwoodman.com), as it becomes available. View the bill in its entirety here:

[http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111\\_cong\\_bills&docid=f:h2868rfs.txt.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h2868rfs.txt.pdf)

Contact Carolyn Grievs for additional information at 815.459.1260 or [cgrievs@baxterwoodman.com](mailto:cgrievs@baxterwoodman.com).

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# TRENCHLESS TECHNOLOGY

*Can you Dig It?...Maybe not!*

## CONSIDER TRENCHLESS TECHNOLOGY



**D**oes your community have deteriorated water mains frequently in need of repair, but the cost and inconvenience of tearing up streets is preventing you from replacing them? Consider trenchless technology! Are your leaking and broken sewers too deep and restoration costs too high to dig up and make repairs or replacement? Consider trenchless technology!

Trenchless technology (TT) construction techniques are used to make utility repairs or replacements and they minimize the need to dig trenches, tear up pavement and disturb other utilities. TTs include directional drilling, micro-tunneling, pipe bursting, cured-in-place-pipe (CIPP), pipe lining, and chemical grouting.

Water mains can be installed under pavement or in environmentally sensitive areas using horizontal directional drilling, with only minor excavations required. CIPP and other sewer lining procedures have been used to complete major sewer repairs in a matter of days, rather than the weeks or months required for traditional open cut methods.

Benefits of TT include potential cost savings for reduced restoration requirements, elimination of messy construction sites, less disruption of traffic, and reduced need for inconvenient detours. In addition to the cost and convenience benefits, the project's carbon footprint can be reduced by as much as 85%, promoting sustainability and preserving the environment while improving our infrastructure.

If you have a project that you think might benefit from using a TT method, contact Baxter & Woodman, named by *Trenchless Technology Magazine* as one of the top 50 trenchless technology design firms in the country. We can help you decide which approach is right for you. Contact Lyle Hammer at 815.459.1260 or email at [lhammer@baxterwoodman.com](mailto:lhammer@baxterwoodman.com).

## INFILTRATION/INFLOW

Are you ready for the next big rain event?

**R**ecord setting rainfalls in 2008 and 2009 caused major flooding issues and wreaked havoc with local sewer systems and wastewater treatment plants. Infiltration and inflow (I/I) of surface and groundwater poured into the sanitary sewers as a direct result of the heavy rains. Although the record setting rain events and related problems made local and national news, it does not take record rainfalls to create high I/I flows. This year's heavy snow cover and already high groundwater levels increase the chance that a significant I/I event will occur in 2010.

### WHAT ARE THE PROBLEMS AND COSTS ASSOCIATED WITH I/I?

The problems associated with I/I are often severe and can be expensive to fix. It is not unusual for communities to have some significant I/I issues on an annual basis and major issues at least every 5 years. Problems and costs of I/I can include:

- Additional labor to deal with high flows/overtime
- Additional pumping and treatment/higher electric bills
- Overloaded treatment plants/permit violations
- Basement back-ups/unhappy customers; liability for damages
- Wastewater bypassing/environmental concerns; permit violations

### HOW CAN MY COMMUNITY REDUCE I/I?

Many communities have initiated programs to locate and remove infiltration from their collection systems. An effective program requires a systematic approach to locate sources of I/I and make repairs to eliminate or reduce flows. An I/I reduction program typically includes flow monitoring, sewer televising, smoke testing, and inspection of manholes. Some of these tasks are most effective when conducted during high flow events while I/I sources are actively flowing. Unfortunately, high flow events are not very predictable and when they do occur, utility staff is usually busy dealing with sewer related problems – not the ideal time to plan flow monitoring and inspections.

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## Bright Idea... LEDs Offer Energy and Cost Savings

Night-time illumination of streets, bike paths and parking areas is a universal community need requiring manpower and dollars for installation, maintenance, and operation. Traditionally, high pressure sodium (HPS) and metal halide (MH) streetlights were installed to meet the need. Due to limited maintenance and operation budgets, more and more communities are looking to LED technology for their lighting needs.

Advances in LED lighting technology are creating a viable option to HPS and MH streetlights. High-power light emitting diode (LED) streetlights are becoming available to meet desired street lighting properties. Additionally, LEDs use significantly less wattage than HPS streetlights to produce the same light output (approximately 40% less!) LEDs last longer than HPS fixtures, cost less to operate, and cost less to maintain over their life span.

Baxter & Woodman is currently involved in a lighting replacement/upgrade project for a medium-sized metropolitan Wisconsin city who is replacing a one mile segment of HPS lights with energy efficient LEDs. The City expects to cut their energy consumption by 60% and evaluate current LED technology for additional streetlight applications in the City. Now that's a bright idea! Contact Oskar Agustsson for more information at 815.459.1260 or [oagustsson@baxterwoodman.com](mailto:oagustsson@baxterwoodman.com).

