

NEWSLETTER · DEC. 2023

Dear Valued Clients and Partners,

This year, Stillwater Environmental Engineering is celebrating its 10th anniversary! Over the past decade, we have worked diligently to provide reliable and innovative environmental solutions to municipalities, industries, and institutions throughout New England. To all of our clients, we are immensely grateful for the trust and support you have shown us throughout this remarkable journey. *As we reflect on the last decade of service and collaboration, this newsletter highlights a few of our environmental compliance projects. We look forward to another 10 years working with clients and communities across the region.*

Environmental Services for the City of Old Town, Maine

Since 2013, SEE has worked with Old Town municipal staff to assist with environmental compliance for the City's ongoing permits as well as several City projects.

As a community that lies within the Greater Bangor urbanized area, Old Town is required by Maine Department of Environmental Protection to maintain a permit to discharge stormwater as a Small Municipal Separate Storm Sewer System (MS4). To assist Old Town in meeting its MS4 requirements, SEE has guided the City in the development and implementation of its MS4 Stormwater Management Plan—a document that outlines specific Best Management Practices (BMPs) designed to reduce the discharge of pollutants to the City's stormwater system. Currently, SEE's team is conducting an environmental review following National Environmental Policy Act (NEPA) processes for a pending Northern Border Regional Commission-funded Riverfront project (NBRC). SEE is also collaborating with the City to introduce a Low Impact Development ordinance.

SEE has supported Old Town's education and outreach campaigns. Collaborative efforts have included the participation of local partners such as the University of Maine, Old Town Canoe, Scouts and Old Town High School. Moreover, SEE is a representative for Old Town in the Bangor Area Stormwater Group (BASWG), a collective of local MS4 communities, whose mission centers around leveraging public education and scientific research to enhance regional water quality via cooperative stormwater management within the Greater Bangor Urbanized Areas.

Beyond this, SEE has aided Old Town in a number of City projects and community initiatives, including:



Working with summer interns to inspect Old Town's storm sewer system.



Development and implementation of an ordinance to prevent erosion risks from new construction



Storm drain stenciling events



Organizing Community Cleanups



Facilitating boat ramp permitting

UGE USA Norway-Paris, Maine Closed Municipal Landfill Solar Photovoltaic Project

SEE assisted UGE USA in acquiring environmental permitting for the construction of an 875 kW solar array over the capped landfill at the Norway-Paris Transfer Station. SEE prepared and submitted supplemental materials for a Solid Waste Project Minor Revision Application for the project, including:

- A Stormwater Management Plan for the project detailing pre- and post-development stormwater impacts;
- A Comprehensive Site Plan, and;
- Submission of application materials to Maine DEP.



Before photo

The revision application was approved by the MDEP, and the project was recently completed. SEE is proud to play a role in the development of sustainable and alternative energy infrastructure that benefits small Maine communities—particularly projects like UGE Norway that repurpose land that may otherwise be use-limited or burdensome to the municipality.



Cutting the ribbon for the new solar field

Photo courtesy: The Sun Journal

Bangor International Airport Deicing Stormwater Treatment System

The Bangor International Airport (BGR) serves as a key gateway for visitors to Maine and connects the Bangor region to the world. BGR is a valuable small commercial airport and a “first stop” for transatlantic flights. Year-round runway operations require effective snow and ice control in order to keep BGR open and safe—and aircraft deicing is a critical component. Similar to most airports in northern climates, deicing chemicals such as propylene glycol that reach the ground at BGR, can be transported by stormwater and meltwater. Runoff from BGR eventually discharges to Birch Stream, an urban impaired stream that flows near the airport operations and to the Kenduskeag Stream. Maine DEP regulates these discharges related to airport operations and requires to be implemented Best Management Practices (BMPs) to reduce pollutants from leaving the site.

The Deicing Stormwater Treatment System that BGR installed in 2009 has been an effective BMP for treating runoff, but improvements were necessary to maintain the effectiveness of the system. SEE has played a significant role in an ongoing series of projects to: assess, maintain, and reconstruct parts of this system to improve its function. SEE conducted a series of system assessments from 2019 to 2021 that involved:

- On-site evaluations;
- Coordination of drawdowns to enable treatment system observation;
- Elevation surveys, and;
- Review of the original (2009) hydrologic analysis for the constructed system.



Phase II Before



Phase II, a fully drained portion of the system



Phase II, inside the De-Icing Stormwater Treatment System



Phase II, After maintenance was completed



The assessments identified maintenance priorities and have informed the ensuing construction/maintenance projects that began in 2021. Construction Phase I (2021) included re-routing of the system to optimize flow conditions and allow for efficient completion of subsequent maintenance phases. Phase II (2022) involved significant maintenance of portions of the subsurface system to improve its function. Phase III (planned for 2023) will further improve the system and increase the efficiency of for routine maintenance.



PARTNERSHIPS



SEE is happy to partner with Ecological Instincts, an environmental consulting firm based in Manchester, Maine, on a project to update the Penjajawoc Stream Watershed-Based Plan for the City of Bangor. The owner of Ecological Instincts, Jen Jespersen, and her team provide a vast set of skills and experience related to watershed management that complement SEE's technical expertise. This balanced partnership, in close coordination with Maine DEP and Bangor city staff, will effectively develop a meaningful and achievable long-term plan to restore the quality of one of Bangor's urban impaired streams.

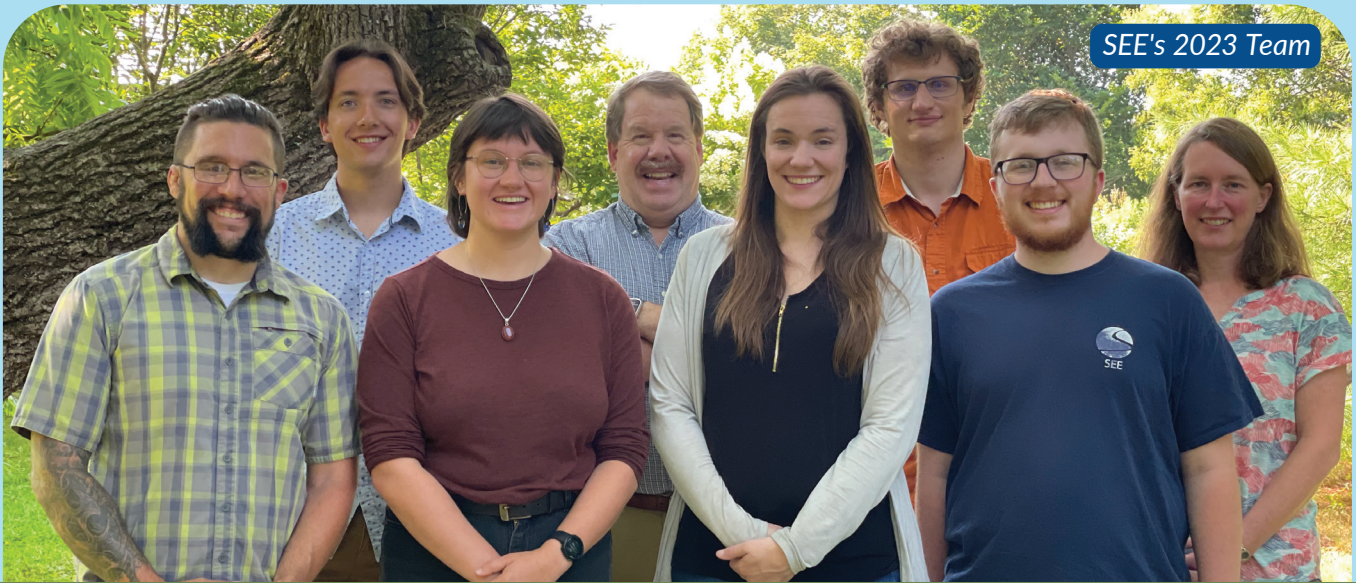
SPOTLIGHT on Novel IDDE Methods

Occasionally, permittees in the municipal stormwater program find evidence of non-stormwater "illicit discharges" in their stormwater systems. Illicit discharges can be one-time events, but more commonly are chronic pollutant sources that enter a stormwater system and eventually reach natural waters without treatment. As part of MS4 requirements, the permittee must investigate these non-stormwater flows to identify and eliminate their potential source(s). This is best accomplished by following an Illicit Discharge Detection and Elimination (IDDE) process to characterize the discharge by iterative water screening for various pollutants. This characterization helps in determining potential sources that can then be addressed.

During annual dry weather outfall inspections, SEE typically identifies several of these non-stormwater flows each year. The IDDE screening process begins immediately, using field-based physical/chemical analyses of the water, as well as visual inspection of the area to look for above-ground "clues" that might explain the source of the flow. However, it is possible, if not likely, that illicit discharges come from underground. If this is the case, the next step of the IDDE process can become more difficult and costly—particularly if it involves digging.

In a recent IDDE investigation, SEE partnered with Centerline Utility Services to assist a client with tracing the source of a chronic illicit discharge that routinely tested positive for human Bacteroides. The SEE team developed an in-pipe water sampling technique that uses a pipe/sewer inspection camera to reach otherwise inaccessible sections of a lengthy underground storm drain pipe. The mobile sampler was assembled by attaching one end of a long sampling tube to the mobile camera scope, connecting a peristaltic pump to the other end of the tube, and securing the tube along the length of the camera cable. Using this assembly, SEE's engineers were able to non-destructively collect water samples at various points along the drain pipe without cross-contaminating samples.





"Wow, it is hard to believe that it has been 10 years since SEE opened for business! I am very fortunate to have the opportunity every day to work with such an outstanding group of young professionals on staff here and appreciate all their efforts to make SEE such a successful venture. I also sincerely thank all of our clients throughout the past decade, as they are the reason SEE exists. I am already looking forward to what the next 10 years hold in store for us!"

Phil Ruck, P.E.*

President, Stillwater Environmental
Engineering, Inc.
*(ME, NH, VT, NY)

10TH SEE
ANNIVERSARY



Locations of SEE's clients over the past 10 years.

*For more information about SEE's impact over the past 10 years,
please visit our 10th Anniversary site page:
<https://stillwaterenv.com/10th-anniversary/>*