



P2 Bulletin

the newsletter of the New York State Pollution Prevention Institute (NYSP2I)

AUGUST 2014

YEAR 6 HIGHLIGHTS: 1-2

Green Technology Accelerator Center
Sustainable Supply Chain

EVENT HIGHLIGHTS: 2

Direct Assistance
Business Sustainability Plan Workshop
NYSP2I Team

FOOD PROCESSING CLUSTER: 3

Wegmans
Wine Sector Project
Organic Resource Locator

GREEN INITIATIVE: 4

Buffalo • Long Island

It has been a wonderful and busy year for NYSP2I! This edition provides a sampling of our 2013–2014 projects supported through our 3 core industrial programs: Direct Client Assistance, Green Technology Accelerator Center and Sustainable Supply Chain, as well as our food processing cluster work and Green Initiatives. We have worked in regions throughout NYS and as our programs continue to grow, we look forward to the exciting work ahead. — Dr. Anahita Williamson, Director, NYSP2I

Year 6 Highlights

Green Technology Accelerator Center (GTAC)

NYSP2I assisted several companies with green product/process commercialization efforts this year. For one company, Isolation Sciences of Williamsville, NY, NYSP2I provided an independent third-party evaluation of the performance of their Continuous Access Port (CAP). The CAP is a new product that fills the gap between a partially open laboratory fume hood door and the fume hood. The CAP system

“NYSP2I’s Green Technology Accelerator Center (GTAC) program, teaming with RIT resources, provided Isolation Sciences with an independent evaluation of the performance of our new Continuous Access Port (CAP) product. The result of this combined effort, documenting our product performance and significant potential savings, will greatly assist in accelerating the commercialization of our Fume Hood CAP to industrial and academic markets. The impact of this project is projected to expand market opportunities into pharmaceutical applications and NYS manufacturing, creating five new jobs and supporting our existing positions. It was a pleasure to work with NYSP2I, the GTAC program and RIT’s staff.”

— Dr. Charles K. Akers
CEO, Isolation Sciences, LLC

was designed to provide a positive environmental impact by reducing the amount of conditional lab air exhausted through the fume hood, thus reducing energy use and cost. With the CAP installed in a laboratory setting, NYSP2I confirmed a reduction in conditioned laboratory air exhaust volumetric flow rate by 83% compared to the same fume hood left in its open working position without the CAP installed. The



annual cost savings associated with the reduced energy consumption provided by the CAP is calculated to be \$2,700 per installation, equivalent to an annual energy savings of 27,000 kW-hr at 2014 energy rates. For additional GTAC project case studies visit <http://www.rit.edu/affiliate/nysp2i/case-studies>



Sustainable Supply Chain

On Earth Day, NYSP2I traveled to New York City to conduct a “Sustainability and the Supply Chain” workshop for the members of the New York & New Jersey Minority Supplier Development Council, Inc. (NYNJMSDC). NYNJMSDC acts as a vital link between major corporations and minority business enterprises, and encourages companies, government agencies, and educational institutions to include minority business enterprises as their suppliers. At the workshop, NYSP2I discussed the importance of sustainable practices in today’s supply chain, and presented various ways in which business enterprises can reduce the environmental impacts of their processes to gain entry into new markets.

Direct Client Assistance Program

This year was very active for NYSP2I's Direct Client Assistance program as we wrapped up several special projects supported by joint funding from the NYS Department of Environmental Conservation, US Environmental Protection Agency, and US Economic Development Administration. Our targeted efforts in Tonawanda, NY included a project with NOCO Inc. to help them reduce greenhouse gas (GHG) emissions associated with heat loss that occurs when asphalt is transported through a pipeline. When heat is lost, natural gas fired heaters are used to maintain the temperature of the asphalt. The objective of this project was

to minimize heater use. NYSP2I assessed the pipeline and calculated the heat loss at areas where the pipe insulation was compromised. NYSP2I determined that replacing insulation in these areas would save NOCO Inc. 1,785 MMBTU of natural gas every year, which is a reduction in GHG emissions of 95 metric tons of CO₂ equivalent. NOCO has installed new insulation and the results of this implementation will be captured in late summer.

Below: Before and after photos and thermal images of insulation repair



“Environmental stewardship has always been a priority for NOCO Energy, especially as it relates to air quality in the Tonawanda industrial corridor where our terminal is located and many of our employees live. Trish Donahue, Marty Schooping, and Mark Walluk from the New York State Pollution Prevention Institute were very professional in their approach to our project and helped us reduce emissions and make progress towards our sustainable business practice goals.”

— Scott Ernst, P.E., Vice President, Corporate Operations, NOCO Inc.

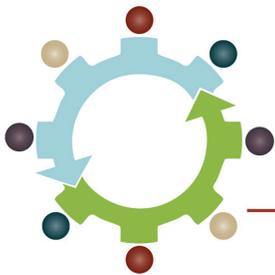
Beginning a Business Sustainability Plan Workshop

NYSP2I presented the *Beginning a Business Sustainability Plan* workshop for more than thirty companies participating in the recently launched Western New York Sustainable Business Roundtable. The Western New York Sustainable Business Roundtable is a network of companies and organizations seeking to create an environmentally and economically thriving Buffalo Niagara Region by providing businesses with tools to become more efficient, competitive and environmentally responsible.¹ As a part of their commitment to the broader group, Roundtable members pledge to have and/or develop a sustainability plan.

Links to workshop materials:

http://www.rit.edu/affiliate/nysp2i/sites/rit.edu.affiliate.nysp2i/files/images/buffalo_sustainability_training_final.pdf

http://www.rit.edu/affiliate/nysp2i/sites/rit.edu.affiliate.nysp2i/files/images/sustainability_plan_development_worksheet_final.pdf



Western New York Sustainable Business Roundtable

Creating an environmentally and economically resilient Buffalo-Niagara



¹ <http://www.wnysustainablebusiness.org/>

The NYSP2I Team in Action

NYSP2I staff volunteered as bell ringers for the Salvation Army's Red Kettle Campaign in December. It was only 17°! *Brrrr*

On a *sunny* day in May, the team helped a local daycare center build a musical playground as part of the United Way Day of Caring.



Food Processing Cluster

NYS's farm to fork sector is essential to the New York State economy and remains a focus area for NYSP21. This year, work continued on the Finger Lakes Food Processing Cluster Initiative Advancement Program, utilizing our Green Technology Accelerator Center, Sustainable Supply Chain Program, and our Direct Assistance Program to help spur economic growth and job creation in the nine-county Finger Lakes region. Over the past year, we have assisted 16 businesses in the region in becoming more competitive and environmentally & economically sustainable.

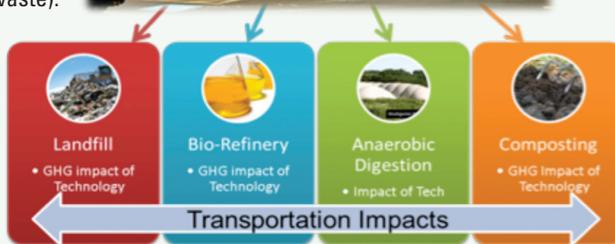
Our work in the food processing sector reached into Western NY, Central NY and Long Island and included wineries, breweries & distilleries. NYSP21 also continued to connect directly with stakeholders to better understand industry needs. In January, NYSP21 conducted a Food Processing Roundtable in conjunction with Central New York Technology Development Organization (CNYTDO), bringing together representatives of different food manufacturers in the Central NY region to identify the industry's environmental goals and challenges, and share best practices, resources, and technologies.



Wegmans: Carbon Footprint of Food Waste Disposal & Transportation

Headquartered in Rochester, NY, Wegmans Food Markets, Inc. (Wegmans) is a family-owned major regional supermarket chain which currently recycles more than 60% of all its waste, and in 2013 donated over 16 million pounds of food to food banks. In addition, 14.3 million pounds of food and produce waste were composted or sent to livestock farmers, further reducing the amount of food waste being sent to landfills. As part of their continued sustainability efforts, Wegmans collaborated with NYSP21 to evaluate the greenhouse gas (GHG) impact of various food waste disposal processing technologies and determine if it would be advantageous, from a holistic GHG standpoint, to transport food waste to alternate disposal sites utilizing alternative processing technologies, versus shipping directly to a landfill. Alternative scenarios included: anaerobic digestion, bio-ethanol fermentation and composting. NYSP21 developed a model to quantify the influence that food waste disposal processes and the waste transportation method, distance and utilization have on the Green House Gas (GHG) impacts of food waste.

The NYSP21 model showed that it is advantageous to transport food waste to alternative bio-processing and composting sites within a 100 mile radius, versus a landfill, if the truck is fully packed (up to 0.9 MTC02e GHG savings per ton of waste). Much of the reduced GHG impact is created through offsetting the benefits for co-products such as alternative energy or compost. However, the volume of co-products generated and therefore the offset benefit is variable based on the type of food waste.



Wine Sector Project



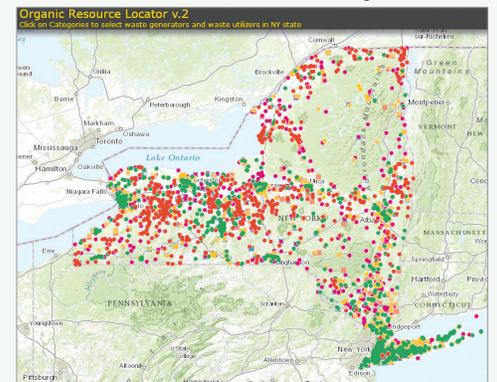
NYSP21 worked with several companies in the beer and wine sector this year, including a prominent winery on Long Island who helped start an organization called Long Island Sustainable Winegrowing. As a result, this winery was already implementing various sustainable practices such as composting and minimal use of fertilizers. However, they partnered with NYSP21 to perform a sustainability assessment of their wine making process in order to determine further ways to efficiently utilize their water, chemical, and energy use. Through an on-site assessment, NYSP21 analyzed their process and identified opportunities for improvement. With NYSP21's technical support, the winery was able to reduce their water consumption by 25% through the use of a new high-pressure washer for cleaning their equipment during harvest.

Organic Resource Locator

It is estimated that 40% of food produced for U.S. consumption (over 30M tons) ends up in our waste stream^{1,2}. In addition to lost resources associated with that waste, the cost of disposal is estimated at over \$1 Billion³. Disposal of food waste also creates an environmental burden. For example, much of this waste ends up in a landfill where it takes up valuable space and releases methane gas, a greenhouse gas 21 times more powerful than CO₂⁴.

Over the last year, NYSP21 has been developing an online, map-based tool to identify sources of organic wastes (such as food processors, farms, and supermarkets) as well as utilizers of organic wastes (such as anaerobic digesters and compost sites) across New York State. The purpose of the tool is to support businesses—in the farm-to-fork industries, wastewater treatment plants, as well as renewable energy generators—in evaluating the feasibility of utilizing these wastes for beneficial uses such as energy production or other sustainable applications.

To view the tool online, click the image below.



www.rit.edu/affiliate/nysp21/organic-resource-locator-beta-version
Acknowledgement: Jacqueline Ebner, Ph.D. candidate, Sustainability

¹ Hall KD, Guo J, Dore M, Chow CC (2009) The Progressive Increase of Food Waste in America and Its Environmental Impact. PLoS ONE 4(11): e7940. doi:10.1371/journal.pone.000794

² U.S. Department of Agriculture, www.usda.gov/oce/food-waste, accessed on September 22, 2013

³ J. Buzby, and J. Hyman. "Total and per capita value of food loss in the United States", Food Policy, 37(2012):561-570

⁴ U.S. Environmental Protection Agency, <http://www.epa.gov/smm/foodrecovery/>

Green Initiative

NYSP2I's Green Initiative was intended to enhance manufacturing competitiveness by creating an environment for innovation, environmental stewardship and production efficiency. Under this Initiative, NYSP2I committed to providing targeted Pollution Prevention assistance to the North Buffalo area, as well as the healthcare sector and the wine production industry on Long Island. A key component of the Buffalo project was engagement with local partners, such as Insyte Consulting (NYSP2I's local partner Regional Technology Development Center), to execute the project work plan.

As of June 2014, the following has been accomplished:

Green Initiative Buffalo

Direct Client Assistance — NYSP2I provided technical assistance to seven area companies, developing cost-effective and environmentally preferable solutions for their production processes.

Green Technology Accelerator Center (GTAC) — Partnering with Clarkson University and RIT, NYSP2I conducted product performance evaluations for two companies on the cusp of commercializing their green technology. Through the positive results of these projects, the companies are forecasting the creation of 10 new jobs.

Research and Development — NYSP2I provided over \$100,000 to support applied research by UB faculty. Awarded projects were required to have (1) a P2 and/or green engineering focus; (2) outcomes that resulted in increased efficiency or minimization of hazardous waste, solid waste, water, wastewater, air pollution, energy, and/or raw materials; and (3) potential to have a positive environmental impact in Buffalo, NY. Preference was given to projects that involved collaboration with business or industry.

www.rit.edu/affiliate/nysp2i/research-and-development

Community Grants — NYSP2I awarded over \$60,000 to Buffalo-based organizations for projects that raised awareness and led to the implementation of P2 practices and/or behaviors in the community. Awards included:



- Erie County Soil & Water Conservation District – “2013 Erie County Envirothon” and “2014 Erie County Envirothon”, and an “Integrated Pest Management workshop”
- Erie County Department of Environment & Planning – “Stormwater Pollution Prevention Public Education Campaign” and “Storm Drain ID – Education”

Green Initiative Long Island

Healthcare:

- NYSP2I hosted a roundtable focused on sustainability in the healthcare sector at the Calverton Incubator of Stony Brook University. Attendees included Assemblyman Fred W. Thiele, Jr. and Senator Kenneth P. LaValle, representatives from the Peconic Institute and several area hospitals.
- NYSP2I provided assistance to a Long Island hospital to identify purchased products that are major contributors to waste generated and identified environmentally preferable alternatives. A decision framework was also developed for the hospital to evaluate the environmental and cost implications of future purchases.

Wineries:

- NYSP2I provided on site assessments for four wineries in Suffolk County to look for more sustainable options with respect to chemical, water and energy use — improvements that can also reduce the wineries' operating costs.



P2 Bulletin • August 2014 • A publication of the New York State Pollution Prevention Institute, 111 Lomb Memorial Dr., Rochester, NY 14623
585.475.2512 • www.nysp2i.rit.edu • **NYS Pollution Prevention Institute** • **NYSP2I**

Executive Editor: Dr. Anahita Williamson, Director • **Managing Editor:** Leanne Bossert • **Graphic Design:** Laura W. Nelson

Contributing Writers: Michelle Butler, Kathleen Kosciolk, Eugene Park, Rajiv Ramchandra, Anastasia Rzhetskaya, Daniel Smith



New York State Pollution Prevention Institute

Rochester Institute of Technology
111 Lomb Memorial Drive
Rochester, NY 14623-0426
585.475.2512, phone ♦ 585.475.6610
nysp2i@rit.edu ♦ www.rit.edu/nysp2i