

**FY 13 Pollution Prevention Grant Program
EPA-HQ-OPPT-2013-001 CFDA 66.708**

**New York City Industrial Waterfront Communities
Pollution Prevention, Toxics Reduction and Resiliency
Planning**

This proposal is submitted by New York State Department of Environmental Conservation (NYSDEC), in partnership with the New York State Pollution Prevention Institute (NYSP2I) and the New York City Environmental Justice Alliance (NYC-EJA) and seeks to promote pollution prevention strategies to reduce the risk of toxic exposures associated with climate change impacts on industrial waterfront communities in New York City.

**Total Project Funding: \$299,000
Requested Funding: \$ 149,000**

Hassan Hussein/Arturo Garcia-Costas
NYS Department of Environmental Conservation Region 2
Division of Environmental Remediation/Office of Environmental Justice
47-40 21st Street, Long Island City, NY 11101
Tel: (718) 482-6462 Tel: (518) 402-7287
Fax: (718) 482-6358
Email: axgarcia@gw.dec.state.ny.us
hehussei@gw.dec.state.ny.us

PROPOSAL NARRATIVE

This proposal is submitted by a partnership of the New York State Department of Environmental Conservation (NYSDEC), the New York State Pollution Prevention Institute (NYSP2I) and the New York City Environmental Justice Alliance (NYC-EJA) and seeks to promote pollution prevention strategies and identify climate adaptation strategies to reduce the risk of toxic exposures associated with climate change impacts on industrial waterfront communities in New York City (NYC). Through pollution prevention strategies including engineering and design approaches related to manufacturing and commercial operations, the project complies with the programmatic and statutory criteria of pollution prevention (P2) grants by aiming to reduce both the amount of hazardous substances, pollutants, or contaminants entering any waste stream or otherwise released into the environment prior to recycling, treatment, or disposal; and the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants, particularly in areas at increased risk due to sea-level rise, coastal storms, extreme precipitation and flooding.

In NYC, polluting industrial facilities are concentrated in vulnerable waterfront communities that are home to low-income communities. NYC's coastal zone management plan, the Waterfront Revitalization Program (WRP¹), encourages heavy industrial and maritime development in six areas called Significant Maritime and Industrial Areas (SMIAs). Development applications in SMIA's are treated differently - and to a lower review standard - than other areas, thereby easing the siting and clustering of heavy industry and polluting infrastructure. In 2010, NYC-EJA discovered that the six SMIA's were all in storm surge zones, and the public health risks associated with clusters of heavy industrial uses and potential toxic exposures in such vulnerable locations had never been analyzed. Hurricane Sandy confirmed the vulnerability of the SMIA's to storm surges. According to NYC's Special Initiative for Rebuilding and Resiliency (SIRR), about half of the businesses impacted by Sandy were industrial firms.

Climate change is creating new risks for residents and workers in low-income communities in NYC. Storm surge, flooding, and severe weather events can result in the release of toxic substances and increase the risk of human exposures. This project focuses on local communities in an area of Bronx County, New York, defined as the South Bronx Significant and Maritime Industrial Area (SMIA). The South Bronx SMIA is located in an environmental justice community bearing a disproportionate share of negative environmental burdens and is also vulnerable to storm surge, flooding, and severe weather. In addition, the project will document lessons learned and incorporate them in a best management practices toolkit and a replicable outreach model to be applied in other industrial working waterfronts.

a. PROJECT NARRATIVE

This proposal has the main goal of promoting industrial pollution prevention and climate adaptation by reducing the generation and use of hazardous materials and toxic risk exposures in facilities subject to climate change impacts. Rather than having these activities occur separately, the proposal suggests a coordinated approach so that local industrial businesses can make a single effort to improve existing conditions, rather than repeated separate changes that will involve greater time, effort and cost for them. The project focuses on industrial businesses within half a mile of the South Bronx SMIA (zip codes 10451, 10454, 10455, 10456, 10459, 10472, 10473, 10474) and addresses the following objective:

1. Define and assess toxic potential exposure risks and vulnerable populations

Convene a stakeholder group within the South Bronx SMIA to inform the industrial community of the goals of this project, seek input to understand the environmental and human health impacts associated with the industries within the SMIA and serve as a conduit for dissemination of information, knowledge, best practices and technologies on pollution prevention and climate adaptation. The stakeholder group would include community representatives, public health experts, environmental scientists, and government agencies.

2. Inventory potential hazardous risk exposures

Identify climate change risks in industrial waterfront areas; and identify the location of industrial facilities

¹ New York City Department of City Planning, 2002. The New Waterfront Revitalization Program. Available at: <http://www.nyc.gov/html/dcp/pdf/wrp/wrptext.pdf>

and sites handling, storing, and transferring hazardous substances and toxic chemicals, and their public health impacts, in the event of severe weather. Relevant federal, state, local and commercial database along with field survey will be used.

3. Provide P2/green engineering implementation assistance to two companies

After the initial assessment is completed, NYSDEC, NYSP2I and NYC-EJA will evaluate the data gathered and identify two companies from a high priority sector. Based on preliminary information at this time there are at least ten “Automotive Body, Paint and Interior Repair/Maintenance” (NAICS Code 811121) facilities in the project area employing approximately 40 persons (www.referenceusa.com) Therefore, the “Automotive Body, Paint and Interior Repair/Maintenance” industry, may be suitable to receiving P2/green engineering assistance. However the Principal Investigator may consider other high priority sector and keep EPA informed.

4. Document potential population impacts

Identify and map populations (workers and residents) vulnerable to health-related climate hazards in industrial waterfront target areas, and identify the potential health risks under different climate-related scenarios, based on the hazardous substances and potential exposures identified in objective 2 to help prioritize vulnerable areas for pollution prevention and adaptation planning.

5. Develop best practices toolkit

Building on P2 tools and best practices already developed for the identified sector and conducting additional research through literature reviews, a toolkit will be developed, published and disseminated to automotive body establishments, providing practical, actionable strategies to reduce their environmental footprint. The toolkit will also address the human health impacts of unsustainable practices, consolidate existing knowledge and best practices for this sector and summarize P2 technologies and process changes focused on green chemistry, green engineering, and strategies for storm risk mitigation.

6. Disseminate knowledge and transfer technology: After successful implementation and toolkit development, NYSDEC, NYSP2I and NYC-EJA will collaboratively host two workshops and organize two demonstrations in the NYC area to disseminate best practices and outcomes from the implemented projects broadly across the auto body repair industry and other industrial waterfronts of New York City.

THRESHOLD PROGRAM REQUIREMENTS

Alignment with National Focus Areas:

- Toxic and Hazardous Materials Reduction – The project’s emphasis is to reduce the use of toxic and hazardous materials.
- Resource Conservation – The project’s emphasis on preventing the generation of waste, more effectively managing waste streams, and general efficiency improvements at target facilities will promote resource conservation.
- Promote Business Efficiency – The project’s assessments will identify pollution prevention opportunities and present cost-benefit information, thus, promoting business efficiency.
- Promote P2 Integration – The assessment and outreach components of this project will help to promote P2 integration.

Alignment with EPA Region 2 Priorities:

- Project promotes projects that effectively achieve qualitative measurable results by reducing the generation and use of hazardous materials (e.g., toxics in products and processes), conserving water, or saving money.
- Project promotes projects that address the above criteria and focus on toxics reductions (e.g., green chemistry, engineering and design) related to manufacturing and commercial operations that impact local communities, especially those that bear a disproportionate share of negative environmental consequences.

Alignment with programmatic and statutory criteria of P2 grants:

- Reduce the amount of area-wide hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment during a storm event. Other opportunities to support this criterion will be offered to individual facilities as assessments are conducted.

- Reduce the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants into the environment during a storm event.
- Reduce or eliminate the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other resources; or protection of natural resources by conservation.

Alignment with EPA’s Strategic Plan:

This program aligns with the following strategic targets (see environmental measures section, below):

- By 2015, reduce 15 billion pounds of hazardous materials cumulatively through P2.
- By 2015, reduce water use by an additional 24 billion gallons cumulatively through P2.
- By 2015, save \$1.2 billion through P2 improvements in business, institutional, and government costs cumulatively.
- Through 2015, increase the use of safer chemicals cumulatively by 40 percent.

PROGRAMMATIC CAPABILITY

Experience Achieving Project Objectives:

The Pollution Prevention Unit (PPU) in the NYSDEC has existed since 1993 and has a history of successes in completing program activities to promote pollution prevention. We have held over 100 workshops and developed over 25 manuals to assist businesses and the public in implementing pollution prevention strategies. A recent EPA P2 grant-funded program to prevent the flushing of pharmaceuticals was extremely successful. This grant resulted in NYSDEC conducting 11 pharmaceutical collection events, with 625 participants and 3661 pounds of pharmaceuticals collected and destroyed. This effort also resulted in the development of guidance on conducting collections which further led to over 150 collections held statewide by municipalities, pharmacies or other entities. In addition, the PPU is actively involved in various Northeast Waste Management Officials Association (NEWMOA) initiatives, including the development of the current metric system being used by the National Pollution Prevention Roundtable and PPU actively supports the collection of P2 measures on a national basis.

Staff Qualifications:

Staff within the NYSDEC’s Pollution Prevention Unit and the Division of Environmental Remediation have many years of experience integrating pollution prevention into New York’s businesses. The NYSDEC skill set available for this project is quite varied and includes professional engineers, environmental specialists and environmental analysts in the Pollution Prevention Unit. Also, this project will utilize expertise available in NYDEC’s Division of Environmental Remediation which includes significant expertise in RCRA hazardous waste management, including a manager with a Ph.D. Finally, the staff at NYSP2I, having many years of expertise integrating P2 into business operations, will be leveraged to support this project. The key personnel identified to focus on this project collectively have over 35 years of experience in the field of P2, with specific experience in P2 implementations for the auto-body industry.

PAST PERFORMANCE

Experience Managing Grants: PPU has a long experience of managing pollution prevention grants. The following is an overview of managed grants:

1. October 2008 to October 2010, NP 97242008, Pharmaceutical Outreach Program - Conducted pharmaceutical collection events and developed guidance for others to use to conduct collection events
2. December 11, 2006, NP -97257306-0, College Intern Program to Promote Green Manufacturing Energy and Water Conservation. Developed the intern program and placed 6 interns with facilities in 2008. Interns were also matched for 2009. Final report submitted to EPA. Grant completed.
3. September 15, 2005, NP - 97277505-0, Continuing to Educate Schools - Contract with NEWMOA successfully administered 10 workshops. Final report submitted to EPA. Grant completed.
4. Jan 20, 2005, NP-97290904-0, Mercury Free Schools Program - Contract with NEWMOA successfully administered and 5 workshops successfully held. Final report submitted to EPA. Grant completed.

5. September 30, 2004 (NCTE - October 30, 2009), NP - 97291004 - 0, Promoting Environmental Management Systems - DEC staff has successfully received training and 2 EMS programs have been held. Rochester Institute of Technology (RIT) has been retained to offer a series of EMS implementation modules to small to medium sized enterprises. Final report submitted to EPA. Grant completed.

Additionally, the NYSP2I, our partner for a portion of this project, has significant expertise in managing EPA grants and measuring project results.

b. WORK PLAN

(i) PROJECT STRATEGY:

The project will address the following tasks:

Task 1: Define and assess toxic potential exposure risks and vulnerable populations

This project will use Community-Based Participatory Research (CBPR) methodologies to bridge research, technical assistance to businesses, and community priorities in the South Bronx SMIA, through the creation of a stakeholder engagement group. NYSDEC, NYSP2I and NYC-EJA will co-convene community experts, city planners, social scientists, public policy experts, and environmental scientists from NYSDEC, NYSP2I and NYC-EJA, including local industrial businesses, representatives from NYC-EJA member organizations that work in/around the South Bronx SMIA, and will invite representatives from other government agencies, as required. The stakeholder engagement group will be the main vehicle to consolidate the collaboration, and will be responsible for advising, monitoring, and reviewing research methods and progress for all tasks in the project.

Action Items:

1. Co-convene a stakeholder engagement group to provide input regarding business/worker and community concerns, identification of environmental and public health issues/risks, vulnerable populations, and vulnerable facilities.
2. Utilize community based participatory research methods to collaborate on the definition and identification of risks, vulnerable populations, and vulnerable facilities, as well as best management practices for pollution prevention and building adaptation.
3. Coordinate meetings of the stakeholder engagement group (maintain records of meeting attendants, meeting minutes) and coordinate additional communications between NYSDEC, NYSP2I and NYC-EJA with the members of the stakeholder engagement group.

Deliverables:

1. Convene two semi-annual meetings of the stakeholder engagement group at key milestones of the project (approximately every six months)
2. Produce a summary report documenting assistance and discussions of all meetings throughout the development of the project.

Task 2: Inventory potential hazardous risk exposures

NYSDEC, NYSP2I and NYC-EJA, in partnership, will determine the relevant metrics to be collected (for example, quantities and types of toxic/hazardous chemicals) from companies and create a facility assessment survey form to develop a robust empirical baseline of the potential hazardous risk exposures in the specified geography. NYSDEC will visit at least 60 companies in the NYSDEC regulated as well as unregulated sectors which make up a representative sample of the of industrial establishments in the specified geography to collect the pertinent information for baseline development. In addition, existing databases from other local, state and federal government agencies will be accessed to supplement information as needed and indicate to the extent possible) the type of potentially hazardous risk exposures that could occur.

This data will serve as the foundation to direct subsequent work in deploying pollution prevention (P2) strategies at these companies (Task 3), inform the development of the best practices and technologies toolkit (Task 5) as well be the baseline or current state against which improvements can be measured and reductions in use and disposal of toxic/hazardous substances quantified. Examples of datasets that will be reviewed include the following:

- 2011 Quarterly Census of Employment and Wages - 6-digit NAICS code business data for NYC industrial/maritime facilities and utilities (NYS Department of Labor).
- US Environmental Protection Agency (US-EPA) regulated facilities covered under the Clean Air Act (CAA);
- Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); Superfund and Brownfields Sites (ACRES); Resource Conservation and Recovery Act (RCRA) Sites;
- Clean Water Act (CWA);
- Emergency Planning and Community Right-to-Know Act (EPCRA);
- Toxics Release Inventory (TRI) Program;
- Section Seven Tracking System (SSTS) Pesticides Program;
- NYSDEC active/inactive major chemical bulk storage, major oil storage, and petroleum storage facilities, environmental remediation sites and solid waste management facilities;
- NYC Department of City Planning (NYC-DCP) restricted environmental development sites; NYC Department of Environmental Protection (DEP) location of facilities regulated under the community right to know program and NYC combined sewage outfalls (CSOs);
- E-Plan - Emergency Response Information System; and
- Pertinent industry/company databases accessible by partners (NYSP2I and NYC-EJA)

Action Items:

1. Develop a data-collection form.
2. Identify the location of industrial facilities and sites handling, storing, and transferring hazardous substances and toxic chemicals, and their potential public health impacts, in the event of severe weather

Deliverables:

1. Data collection form
2. Conduct at least 60 assessment
3. Prepare a report

Task 3: Provide P2/green engineering implementation assistance to two companies

After the initial assessment is completed, NYSDEC, NYSP2I and NYC-EJA will evaluate the data gathered and identify two companies from a high priority sector. Based on preliminary information at this time there are at least ten “Automotive Body, Paint and Interior Repair/Maintenance” (NAICS Code 811121) facilities in the project area employing approximately 40 persons (www.referenceusa.com) Therefore, the “Automotive Body, Paint and Interior Repair/Maintenance” industry, may be suitable to receiving P2/green engineering assistance. NYSP2I will primarily take the lead in providing direct P2/green engineering implementation assistance to two identified companies. A brief technical analysis of the green engineering improvement opportunities that have already been identified at the two participating companies will be completed. The analysis will map out a clear strategy for implementation of the green chemistry and green engineering solutions resulting in measurable reductions of hazardous/toxic materials and wastes, and potentially water and energy usage. Tangible pollution prevention opportunities that exist at auto-body shops include:

- a. Replace solvent basecoats with waterborne basecoats to reduce VOC emissions and haz. waste
- b. Elimination of methylene chloride (used for stripping)
- c. Installation of vacuum, dust-free sanding machines to prevent exposure of potential toxic dust to workers and release to environment
- d. Installation of distillation units to recover spray gun cleaning solvent
- e. Implementation of improved washing operation to prevent wastewater release to drains

Environmental and cost-savings metrics will be collected by the project team post-implementation, and results will be measured annually for two years. The cost of the equipment and installation varies by project. The project team is allocating \$20,000 of the budget to offset equipment costs for implementations for the two companies. The companies will be responsible for the balance of the cost. NYSP2I will investigate additional funding sources (i.e. ESD/NYSERDA) to assist with these costs.

Action Items:

1. Conduct brief technical analysis to understand opportunities for improvement and develop individual company implementation plan. Verify pre-implementation (baseline) metrics
2. Develop and execute project agreements with selected companies for green engineering implementation
3. Support company with information needed to order and install equipment, gain access to or provide appropriate training, as applicable
4. Monitor and assist with Implementation of process improvements
5. Collect metrics post-implementation of equipment and/or implementation of process improvements
6. Provide funding to company to offset equipment cost after installation (\$10,000 per company)
7. Prepare a summary report of implementations including pre and post installation metrics for companies
8. Prepare a case study for publication on NYSP2I and NYC-EJA websites for each company, to raise interest statewide and nationally, and invite other similar business in this sector to consider the implementation of the pollution prevention strategies showcased in the case studies. This would include industries in other industrial waterfront neighborhoods of New York City – and will be readily transferrable to other coastal cities.

Deliverables:

1. Technical analysis and improvement/implementation plans completed for two companies
2. Green engineering implementations completed for two companies
3. Environmental metrics before and after implementation; summary reports written for each company
4. A case study developed for each company and posted on NYSDEC, NYSP2I and NYC-EJA websites

Task 4: Document potential population impacts

NYSDEC, NYSP2I and NYC-EJA will use Geographic Information Systems (GIS) technology, to map the most recent demographic and socio-economic indicators available from the US Census Bureau at the census tract level; educational, health, and other caregiver facilities where vulnerable populations reside or attend (such as schools, hospitals, nursing homes, day care centers, prisons); emergency transportation infrastructure in industrial waterfront target areas vulnerable to climate change impacts (such as evacuation routes, evacuation centers, bus routes, and subways stations); and health indicators publicly available for New York documenting the current rates of cancer, injury, respiratory, cardiovascular, renal, heat-related, cold-related, vector-borne, food-borne, and waterborne diseases and possibly other conditions.

Action Items:

1. Identify and map populations (workers and residents) vulnerable to health-related climate hazards in industrial waterfront target areas; and
2. Identify the potential health risks under different climate-related scenarios, based on the hazardous substances and potential exposures identified in task 2 in order to help prioritize vulnerable areas for pollution prevention and adaptation planning.

Deliverables:

1. Produce a compendium of 15 maps documenting demographic, socioeconomic indicators; health, care giving, and other facilities; emergency transportation infrastructure; health indicators. These maps will summarize data for the South Bronx SMIA at the census tract level, and will rely on the most detailed level of aggregation publically available when data is not available at the census tract level.
2. Prepare a summary map overlaying the results of task 2, overlaying the location of the potential hazardous risk exposures in the context of the community indicators mapped as part of deliverable 1.

Task 5: Develop “best management practices” toolkit for P2 and climate change adaptation

Building on P2 tools and best practices already developed for the identified sector and conducting additional research through literature reviews, a toolkit will be developed, published and disseminated to automotive body establishments, providing practical, actionable strategies to reduce their environmental footprint, human health impacts of unsustainable practices (from task 4), compliance assistance as well as information on additional technical and financial resources that may be available. The toolkit will consolidate existing knowledge and best practices for this sector and summarize P2 technologies and

process changes focused on green chemistry, green engineering, and strategies for storm risk mitigation. The outcomes of the two green engineering implementations will also be summarized as case studies and included in the toolkit.

Action Items:

1. Document P2 and climate adaptation tools and best practices through literature reviews and case studies to develop a toolkit to be published and disseminated to local industrial businesses in the South Bronx SMIA. The toolkit will consolidate existing knowledge and best practices on P2 technologies and process changes focused on green chemistry, green engineering, and strategies for storm risk mitigation;
2. Identify technical and financial resources and strategies for local businesses to implement best management practices for pollution prevention and climate change adaptation to yield healthier and more resilient waterfronts; and
3. Disseminate the toolkit among industrial businesses in the South Bronx SMIA, and other industrial waterfronts of New York City.

Deliverables:

1. Best practices and technologies toolkits developed
2. Toolkits posted on NYSDEC, NYSP2I and NYC-EJA websites

Task 6: Disseminate knowledge and transfer technology: After successful implementations and toolkit development, NYSDEC, NYSP2I and NYC-EJA will collaboratively host two workshops in the NYC area to disseminate best practices and outcomes from the implemented projects across the autobody repair industry and other industrial waterfronts of New York City. The workshops will also be publicized through various media including the NYSP2I and NYC-EJA websites/newsletter, and newspaper articles.

Action Items:

1. Organize and plan logistics with NYSP2I and NYC-EJA for two workshops
2. Market and conduct the workshops with NYSP2I and NYC-EJA;
3. Identify additional opportunities to disseminate the case studies and toolkit developed under Task 2 (such as at Sandy recovery discussions by federal, state and local government task forces), and other stakeholder meetings (such as the EPA National Environmental Justice Advisory Council's working group on industrial waterfronts and climate change); and
4. Write and publish project article for NYSDEC, NYSP2I, and NYC-EJA newsletters and other media.

Deliverables:

1. Two workshops to companies in the autobody repair industry
2. Project article published and disseminated to the industry, NYSDEC mailing list, NYC-EJA stakeholders, and through the NYSP2I newsletter

Task 7: Develop quality assurance plan, program metrics, and provide reports and evaluations

The project team will evaluate this project based upon several metrics and indicators of performance and ultimate success, as detailed in Table 4.

Action Items:

1. Write and submit quality assurance project plan (QAPP);
2. Write and submit semi-annual progress reports to EPA; and
3. Write and submit final project report to EPA, including metrics reporting.

Deliverables:

1. QAPP
2. Semi-annual progress reports and final report including metrics

(ii) ENVIRONMENTAL MEASURES

Outputs:

- Count of assessments: At least 60 assessments performed
- Count of implementations: Two implementations
- Count of case studies: Two case studies developed

- Assessment attendee follow-up: Increased awareness and education resulting from participation in the assessments
- Number of visitors to the NYSP2I and NYSDEC websites: Website visitors log and usage statistics
- Number of case studies distributed: Number of materials distributed via the web and hard copy, at least 50
- Industry sectors and stakeholders engaged: Autobody shops, wood finishing, dry cleaners, auto salvage, (others as identified); NYSDEC, NYSP2I, NYC-EJA, NYC Agencies, Bronx Chamber of Commerce, Industry Trade Associations (such as Dry Cleaners Association)

P2 Outcomes:

P2 efforts	Pounds of Hazardous Materials Reduced, Resources Conserved and Dollars Saved per year			
	Haz. Inputs	Haz. Waste	Air Pollution	Dollars saved
<i>Units</i>	<i>(lbs/year)</i>	<i>(lbs/year)</i>	<i>(lbs/year)</i>	<i>(\$/year)</i>
1. 50% replacement of solvent coating with waterborne coating, per autobody shop per year	225	2.5	222.5	To be determined
2. Installation of vacuum sanding system improving indoor air quality, work quality and reducing costs, per autobody shop per year	0	0	To be determined	\$7,000

1. 50% replacement of solvent coating with waterborne coating, per autobody shop per year²
 - A typical autobody shop utilizes approximately 50 gallons per year of solvent reducer. The density of the solvent is around 9lbs/gallon. Thus, 50 gallons/year x 9 lbs/gallon = 450 lbs/year of solvent is used annually at one autobody shop. Assuming 50% of the solvent coating is replaced with a waterborne coating, 225 lbs/year of solvent use will be eliminated and replaced. Assuming both the P2 projects that are undertaken result in 50% replacement of solvent coating, as well as 2 additional shops that switch to waterborne coating after dissemination of best practices, this could result in 225 lbs/year x 4 companies = 900 lbs/year across 4 companies of solvent reduction.
2. Installation of vacuum sanding system improving indoor air quality, work quality and reducing costs³
 - Humes Collision Center, Inc. of Minnesota installed a vacuum sanding system for \$9,000. The new contained sanding system has improved indoor air quality, reduced employee labor costs for cleaning dust off cars and in the shop, and almost eliminated the need to redo work on cars damaged from dust particulates. In addition, air filters are changed less frequently and the amount of sandpaper used has been reduced. Since installation, Humes has saved over \$7,000 per year, primarily from labor costs.
 - Assuming 4 companies in total install vacuum sanding systems, that are similar in cost and capacity to the one installed by Humes Collision Center, Inc. and result in similar cost savings, the annual cost savings for 4 companies could be \$7000/year x 4 companies = \$28,000/year across 4 companies.

(iii) BUDGET DETAIL

PERSONNEL

	Federal Funds	State Match
(1) Regional Director @ 1% of \$135,000/yr or 39 Hours	\$0	\$2,700
(1)Environmental Engineer 4 (DEC Region 2) @ 2.5% of \$114,961/yr or 97.5 hours	\$0	\$5,748
(1)Environmental Engineer 3 (DEC Region 2) @ 10% of \$103,848/yr or 390 hours	\$0	\$20,770
(1)Environmental Engineer 1 (DEC Region 2) @ 25% of \$75,102/yr or 975 hours	\$0	\$37,551
(1)Citizen Participation Specialist 2 (DEC EJ Office) @ 5% of \$78,888/yr or 195 hours	\$0	\$7,889

² These expected reductions are based on a proposal that was awarded for similar work that was completed through an EPA Region 1 grant in Rhode Island.

³ <http://peakstoprairies.org/p2bande/autobody/abguide/fs5.cfm>

(1)Climate Change Office Staff @ 1% of \$100,822/yr or 39 hours	\$0	\$2,016
(1) Environmental Specialist (PPU) @ 1% of \$65,190/yr or 39 Hours	\$0	\$1,304
TOTAL	\$0	\$77,978

FRINGE BENEFITS

	Federal Funds	State Match
Fringe Rate @ 50.16%	\$0	\$39,114

TRAVEL

	Federal Funds	State Match
	\$0	\$0

OTHER

	Federal Funds	State Match
	\$0	\$0

CONTRACTUAL

	Federal Funds	State Match
Technical Support from NYSP2I	\$100,000	\$0
Technical Support from New York City Environmental Justice Alliance	\$49,000	

INDIRECT CHARGES

	Federal Funds	State Match
Indirect Rate @ 28.22% of Personnel & Fringe Benefits	\$0	\$33,043

(iv) PROJECT TIMELINE

Milestone	Date
Project Initiation	10/01/2013
QAPP Approved	11/30/2013
Define and assess toxic potential exposure risks and vulnerable populations	12/01/2013
Inventory potential hazardous risk exposures	02/01/2014
Document potential health impacts	04/01/2014
Commence P2/green engineering implementation assistance to two companies	06/01/2014
Best Practices Toolkit – Initiation of Development	06/01/2014
Best Practices Toolkit - Complete	01/31/2014
Annual reports to EPA	09/30/2014; 09/30/2015
2 workshops/demos complete	07/31/2015
Final Report Submitted	09/30/2015
Project Complete	10/01/2015

Key Resources

Project Team and partners:

NYSP2I will provide the green engineering/green chemistry expertise, while NYC-EJA will assist NYS DEC and NYSP2I to: define and assess toxic potential exposure risks and vulnerable populations; create an inventory potential hazardous risk exposures; document potential health impacts; develop a “best management practices” toolkit; and engage in knowledge dissemination and technology transfer to reduce environmental impacts.

NYSP2I is a statewide research and technology transfer center providing a comprehensive and integrated program of research, technology development and diffusion, outreach, training and education aimed at making New York State more sustainable for workers, the public, the environment and the economy. NYSP2I has a proven track record of providing New York State companies cost-effective and environmentally preferable solutions by promoting green manufacturing and sustainable practices. Since 2008, NYSP2I has worked with businesses through its *Direct Client Assistance Program*, identifying opportunities upstream in their processes and leveraging green engineering tools and techniques to optimize process, reduce environmental footprint and implement improvements. To date, NYSP2I has

assisted over 150 companies with P2 projects across a variety of industries, and has conducted 81 workshops covering 32 different topics – resulting in over 2,300 people trained.

Sole Source Justification for NYSP2I:

In March 2008, after a competitive bidding process, the NYS Department of Environmental Conservation entered into a contract with the Rochester Institute of Technology to create and develop the NYS Pollution Prevention Institute. To date the Department has invested over \$4.3 million to establish NYSP2I. As a result of this investment, RIT has developed a unique service model and has delivered peerless pollution prevention assistance to the state’s businesses in conjunction with their partners Clarkson University, the University of Buffalo, Rensselaer Polytechnic Institute, and the state’s 10 Regional Technology Development Centers. These academic and business partnerships provide high tech services to small and medium sized businesses that are not available from any other service provider in the state. Between March 2008 & October 2011, NYSP2I’s work has resulted in the following reductions:

Hazardous Waste/Materials: >1,198,412 pounds	Non-hazardous Waste/Materials: >39,134 pounds
Electric Energy use: >1,020,995 kilowatt hours	Water Use: >11,544,356 gallons

NYC-EJA was selected as a contractor, because they are a well-respected Environmental Justice coalition with strong ties to the community. NYC-EJA is a non-profit citywide network linking grassroots groups from low-income communities of color in their struggle for environmental justice. They are also heavily involved in addressing the environmental risks associated with industry and extreme adverse weather events. Their NYC-wide base – coupled with the physical location of several of their members within the Study Area of the South Bronx SMIA - background and experience make them uniquely qualified to provide valuable information for the assessments, inventories, toolkit and knowledge dissemination for the project. For over 20 years, NYC-EJA has led NYC & NYS research projects and policy campaigns to advance environmental justice. In 2003, NYC-EJA advocated for NYS's first Brownfield remediation Law, which introduced the innovative Brownfield Opportunity Area Program – now a national model for the EPA.

Key Personnel, Staff Expertise/Qualifications:

Dr. Hassan Hussein, PE, Chief NYS DEC Region 2 RCRA/Remediation Section

Hassan Hussein will take the lead on field assessment; provide information on opportunities for hazardous waste reduction and disposal strategies; review data from waterfront facility assessments and assist with outreach and follow-up assessment . He currently heads the RCRA compliance as well as the long-term petroleum spill remediation program (>1000 sites) and has over 20 years experience in RCRA permitting, compliance monitoring and enforcement both civil and criminal actions. Dr. Hussein holds a PhD in Civil Engineering from City University of New York

Arturo Garcia-Costas, NYSDEC, Office of Environmental Justice (EJ). Mr. Garcia, who heads the Office of Environmental Justice in New York City, will oversee the development and implementation of outreach efforts, and provide expertise and direction on resolution of environmental justice issues.

Dr. Anahita Williamson, NYSP2I Director, will oversee P2I’s efforts for this project. Dr. Williamson has a strong background and extensive experience in the field of environmental engineering, including manufacturing process modification for improved material recovery and reuse, design for the environment and life-cycle assessment. Williamson has multiple peer-reviewed publications and has presented at multiple international conferences. Williamson is also the recipient of the EPA’s 2012 Environmental Quality Award. Dr. Williamson holds a B.S. in Chemical Engineering and M.S. and Ph.D. in Civil and Environmental Engineering, all from Clarkson University.

Eddie Bautista is Executive Director of the NYC Environmental Justice Alliance (NYC-EJA), a network of community-based organizations advocating for the empowerment and just treatment of environmentally overburdened neighborhoods. Previously, Eddie served as Director of the NYC Mayor’s Office of City Legislative Affairs (where he spearheaded efforts to pass several landmark laws, including NYC’s 20-year Solid Waste Management Plan), and Director of Community Planning for NY Lawyers for the Public Interest, where he organized coalitions blocking the siting of polluting infrastructure in overburdened communities, while revising public solid waste and energy policies.