

FY 2020 – FY 2021 Pollution Prevention Grant Award Summaries

During fiscal years 2020-2021, EPA awarded 42 Pollution Prevention (P2) grants totaling \$9.35 million to support pollution prevention (P2) activities across all environmental media – air, water, and land. Award recipients represent state agencies, federally-recognized tribes and colleges and universities that are instrumentalities of a state.

The award summaries below include the grant recipient's name, the federal grant amount and a brief description of the project. Grant projects reflect a two-year funding period whereby projects will begin in October 2020 or soon thereafter and are due to complete in October 2022. Projects will focus on one or more of the P2 Program's National Emphasis Areas – Food and Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; or Metal Manufacturing and Fabrication.

For additional information on the awarded grants, please contact the [EPA Regional P2 Program](#).

- [Region 1 \(CT, ME, MA, NH, RI, VT\)](#)
- [Region 2 \(NJ, NY, PR, VI\)](#)
- [Region 3 \(DE, DC, MD, PA, VA, WV\)](#)
- [Region 4 \(AL, FL, GA, KY, MS, NC, SC, TN\)](#)
- [Region 5 \(IL, IN, MI, MN, OH, WI\)](#)
- [Region 6 \(AR, LA, NM, OK, TX\)](#)
- [Region 7 \(IA, KS, MO, NE\)](#)
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REGION 1 (CT, ME, MA, NH, RI, VT)

CONNECTICUT

Connecticut Department of Energy and Environmental Protection (DEEP)

- National Emphasis Area: Food and Beverage Manufacturing and Processing
- EPA Grant: \$192,451

The grantee will provide P2 technical assistance to businesses throughout the state that manufacture or process foods and beverages. The focus will be on reducing air pollution emissions, high energy and water use, toxics from chemical use, and hazardous and solid wastes, and associated costs. DEEP plans to provide on-site technical assistance to a minimum of three facilities each year for the first two years of the project. Additionally, DEEP will offer off-site technical assistance to a minimum of six businesses, and DEEP will partner with ten or more businesses to host one to two roundtables, meetings, and webinars for these businesses to learn about P2 techniques per year. This project will develop written materials such as a sustainability checklist and will be disseminated widely so that others can benefit from these strategies.

MAINE

University of Southern Maine

- National Emphasis Area: Food and Beverage Manufacturing and Processing
- EPA Grant: \$127,435

The grantee and its grant partners will provide P2 technical assistance and training to small craft breweries by conducting 10 brewery site visits, creating 10 process maps, and providing recommendations to each brewery on how to implement P2 strategies. The grantee will also work to develop P2 resources: process-mapping, developing an environmental management planning guidance, a comprehensive brewery checklist, a certification program, and supplying training videos that will be posted on YouTube. In addition, three interns with the University's Tourism and Hospitality, and Environmental Science departments will be engaged in service-learning opportunities, which will give the students experience and training in P2 strategies for the food and beverage industries. The grantee will present their grant project results at the 2022 Craft Brewers Conference, New England Craft Brew Summit (NEBrew!), and the Maine Grocers & Food Producers Association event.

RHODE ISLAND

Rhode Island Department of Environmental Management

- National Emphasis Area: Food and Beverage Manufacturing and Processing
- EPA Grant: \$200,000

The grantee will establish a P2 program that will provide technical assistance to breweries, wineries and distilleries in Rhode Island so that these entities can implement P2 strategies to reduce water use; wastewater discharges of: biochemical oxygen demands (also known as BODs), total suspended solids (also known as TSSs), basic and acidic pH and phosphorous levels; and energy use. The grantee will also work to reduce hydrofluorocarbons from commercial refrigeration. Solid waste diversion will also be a focus of the project. The grantee will work with state and local environmental organizations, P2 expert firms, contractors, energy audit firms, energy companies, and trade associations to provide on-site technical assistance to 32 breweries, 20 wineries and 12 distilleries in Rhode Island, and develop six trainings, webinars and roundtables to discuss pretreatment technologies for wastewater and share data gathered from the on-site technical assistance. The grantee will also award participating businesses with a "green certified business" award.

NEW HAMPSHIRE

New Hampshire Department of Environmental Health Services

- National Emphasis Area: Food and Beverage Manufacturing and Processing
- EPA Grant: \$190,000

The grantee will continue its work with ten New Hampshire breweries, wineries and beverage distilleries, and expand its technical assistance availability to these businesses to help reduce the strength and volume of their wastewater, minimize energy and water use, and promote green chemistry. The grantee will collect baseline data and provide technical assistance and on-site energy

audits with New Hampshire utilities and cost savings calculations to breweries, wineries and distilleries, as well as follow up visits, to a minimum of five facilities per year. In partnership with the New Hampshire Brewers Association and the New Hampshire Craft Spirits Organization, the grantee will provide training at conferences and workshops. The grantee will also share information, webinars and case studies provided by other sources such as other P2 programs through its network.

VERMONT

Vermont Department of Environmental Conservation

- National Emphasis Area: Aerospace Product and Parts Manufacturing and Maintenance
- EPA Grant: \$181,662

The grantee will investigate sources of perfluorinated and polyfluorinated alkyl substances (PFAS) contamination found in effluent from metal plating facilities. The grantee will characterize PFAS discharges from four to six metal finishing businesses, identify PFAS sources, and identify P2 best practices to reduce PFAS use and contribution to wastewater. The grantee will work with these target businesses to identify “green” alternatives to PFAS-containing products. This project will also provide on-site and off-site technical assistance; in-person and presentation style training; remote one-on-one assistance over phone and email; webinars and presentations; distribution of best management practices information; and outreach materials.

REGION 2 (NJ, NY, PR, VI)

NEW JERSEY

Rowan University

- National Emphasis Area: Auto Manufacturing and Maintenance
- EPA Grant: \$299,974

The grantee is partnering with ExxonMobil Corporation to investigate lubricant formulation blending operations at the ExxonMobil facility in Paulsboro, New Jersey. The goal of the project is to reduce the amount of downgraded oil produced from cleaning and blending operations. Phase 1 of this project consists of literature review, online meetings and in-person visits to collect preliminary data and understand the ongoing operations at the ExxonMobil facility. Phase 2 will involve a detailed evaluation of potential safer alternatives for minimizing lube oil downgrade, such as pipeline coatings, fluid blasting, vibration cleaning, inline filtration systems, solvent flushing, and base oil recovery. Phase 3 will consist of experiments to test the effectiveness of shortlisted alternatives. Phase 4 will involve detailed analysis of the experimental results, including environmental impact assessments. And, Stage 5 is evaluation and reporting of results. The grantee will visit its partners and conduct semi-annual review sessions and share results in at least four presentations at regional and national conferences, three journal publications, and several press release and newsletter articles.

Rutgers University

- National Emphasis Area: Food and Beverage Manufacturing and Processing
- EPA Grant: \$298,253

The grantee is partnering with public and private sector experts to provide technical assistance to New Jersey's winery industry to reduce environmental impacts through energy efficiency and water conservation measures and by identifying transferrable best management practices. The project will assess four wineries of varying types and capacities in New Jersey, quantifying their baseline energy and water consumption, and wastewater discharge amount by benchmarking. The project, after benchmarking, will provide innovative P2 recommendations to improve their environmental practices and reduce expenditures. The grantee will organize two workshops to train 20 to 25 wine industry members and hold four meetings. Additionally, Rutgers will also create four energy efficiency- and water savings-related short videos and web-based educational materials to provide comprehensive technical information.

REGION 3 (DE, DC, MD, PA, VA, WV)

DISTRICT OF COLUMBIA

District of Columbia Department of Energy and Environment

- National Emphasis Area: Auto Manufacturing and Maintenance
- EPA Grant: \$81,085

The grantee's GreenWrench Automotive P2 Program will provide P2 technical assistance to automotive maintenance shops, training at technical schools, and technical support for businesses with electric and hybrid vehicles. The program will employ community-based social marketing to shift behavior, encourage innovation by directly engaging 40 businesses to change industry culture, and train automotive repair technicians on P2 best management practices.

DELAWARE

University of Delaware

- National Emphasis Area: Auto Manufacturing and Maintenance
- EPA Grant: \$113,976

The grantee proposes to provide on-site energy and waste assessments for Automotive Manufacturing and Maintenance facilities. The grantee will present businesses with documented findings, recommendations, and follow-up information and technical assistance to help facility decision-making implement recommended P2 practices and improvements. Teams of subject matter experts and highly trained students will assess energy and water consumption and pollution production in the facility, perform an accurate quantification of energy, water, and pollution streams, identify potential reduction measures, and quantify the actual reductions of energy, water, pollution, and associated monetary costs to the facility.

MARYLAND

Maryland Department of Environment

- National Emphasis Area: Food and Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; and Metal Manufacturing and Fabrication
- EPA Grant: \$134,805

The grantee will assist businesses by establishing and managing a Green Registry for the state of Maryland and establishing green teams made up of businesses. Green Registry requires members to develop online profiles describing at least five environmental practices and at least one measurable result. The grantee will provide P2 technical assistance checklists, case studies and vendor resources specific to their business, directing them to the P2 technical services and helping them define their P2 measures and calculate results. The grantee will also work with up to six businesses to create a green team to identify environmental problems, prioritizing these problems, and then identifying objectives and targets to address them. The green team is a 3-month program with an initial phone consultation, a workshop, and on-site technical assistance visits. The workshop will provide training to enhance the participants' understanding of environmental management systems also known as EMSs, including identification of problems and impacts, objectives and targets, and address the benefits of using P2 approaches to address the environmental impacts.

PENNSYLVANIA

Pennsylvania State University

- National Emphasis Area: Food and Beverage Manufacturing and Processing and Metal Manufacturing and Fabrication
- EPA Grant: \$412,643

The grantee and its partners will provide 18 P2 and energy efficiency technical assistance and six E3 events for Pennsylvania food and beverage manufacturers as well as metal manufacturers and fabricators. The grantee will help businesses reduce the amount of hazardous substances, pollutants, and contaminants from entering waste streams by identifying best management practices to improve processes to use raw materials efficiently, increase energy efficiency and water conservation. The project's activities will also educate the next generation of engineering students.

VIRGINIA

Virginia Department of Environmental Quality

- National Emphasis Area: Food and Beverage Manufacturing and Processing
- EPA Grant: \$78,684

The grantee will provide P2 technical assistance to breweries and wineries participating via two workshops and develop a Virginia "green guide" documenting P2 best practices in these subsectors. The grantee will also provide technical assistance by holding three webinars for businesses participating in the Virginia Environmental Excellence Program (VEEP).

Wytheville Community College

- National Emphasis Area: Auto Manufacturing and Maintenance and Metal Manufacturing and Fabrication
- EPA Grant: \$25,200

The grantee will provide small and medium-sized businesses in the automotive manufacturing and maintenance and metal manufacturing and fabrication sectors in Virginia with assistance for improving their environmental performance through Economy, Energy and Environment (E3) technical assessments, workshops, and on-site assistance.

WEST VIRGINIA

West Virginia University

- National Emphasis Area: Metal Manufacturing and Fabrication
- EPA Grant: \$217,448

The grantee will provide comprehensive on-site technical assistance to 12 metal manufacturing and fabrication facilities. The grantee will help the facilities reduce the use of toxic materials as well as use of water, energy, and other raw materials, while also lowering their business costs. The grantee will hold five workshops to provide structured training sessions on source reduction techniques, and one conference with themed roundtables will be organized in collaboration with the local and state agencies and industrial partners to synthesize P2 opportunities and solutions that are unique to the metal manufacturing and fabrication businesses. The grantee will also provide off-site technical assistance on P2 best practices.

REGION 4 (AL, FL, GA, KY, MS, NC, SC, TN)

ALABAMA

University of Alabama

- National Emphasis Area: Auto Manufacturing and Maintenance and Food and Beverage Manufacturing and Processing
- EPA Grant: \$63,000

The grantee will identify opportunities to reduce and prevent pollution for food and beverage manufacturers and automotive manufacturers. The grantee will present P2 practices at safety professional meetings and will hold workshops for the Alabama Brewer's Guild and Alabama Automotive Manufacturing Association. The grantee will also conduct on-site technical assessments and suggest methods to reduce water use, wastewater discharge, VOCs and HAPs in air emissions, energy use, and hazardous waste generation.

GEORGIA

Georgia Tech University

- National Emphasis Area: Food and Beverage Manufacturing and Processing and Auto Manufacturing and Maintenance
- EPA Grant: \$182,000

The grantee will assist manufacturing communities in the food and automotive sectors. Using an Economy, Energy and Environment (E3) approach, the grantee will help manufacturers reduce hazardous chemical usage, save energy, incorporate renewable energy sources, reduce water consumption, and improve water quality by recommending improvements in processes, technology, equipment, materials, and maintenance activities. The grantee anticipates assisting 10 percent of the total food and automotive industries in Georgia, which represent the two largest industrial employers in the state.

KENTUCKY

Kentucky Department of Compliance Assistance

- National Emphasis Area: Food and Beverage Manufacturing and Processing and Auto Manufacturing and Maintenance
- EPA Grant: \$192,000

The grantee will encourage pollution prevention, energy efficiency, and waste reduction to support sustainability and improve competitiveness, with an emphasis on distilleries, breweries and automotive manufacturing and maintenance. The grantee will continue to implement the Kentucky Excellence in Environmental Leadership (KY EXCEL) program, which provides education, outreach, and recognition to businesses seeking assistance in developing environmental P2 programs.

MISSISSIPPI

Mississippi Department of Environmental Quality

- National Emphasis Area: Food and Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; and Metal Manufacturing and Fabrication
- EPA Grant: \$122,043

The grantee aims to increase pollution prevention adoption by manufacturers, businesses, and communities through the Economy-Energy-Environment (E3) technical assistance framework and through its environmental leadership program, enHance. The grantee will help manufacturers assess operations and identify opportunities to reduce solid and hazardous wastes, energy, and water consumption. The grantee will conduct six workshops, including enHance Environmental Stewardship workshops to provide training on E3 principles of energy efficiency, lean manufacturing practices, and environmental waste reduction measures. The grantee will partner with Toyota to deliver a workshop designed to address specific E3 opportunities for the automotive manufacturing sector. Resources will be made available through the grantee's P2 webpage and enHance resources website, fact sheets on best management practices and waste reduction opportunities, tools for analyzing P2 opportunities, and

E3 case studies. The grantee will also provide on-site technical assistance such as E3 Assessments to manufacturers through a partnership with the Mississippi Manufacturers Association Manufacturing Extension Partnership.

NORTH CAROLINA

East Carolina University

- National Emphasis Area: Food, Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; and Metal Manufacturing and Fabrication
- EPA Grant: \$189,241

The grantee will work to target high energy consumption processes in diverse facilities within that state of North Carolina for improved efficiency. The grantee will identify no-or low-cost improvements for increased efficiency at the facilities by conducting an engineering analysis. The grantee will also produce an environmental management plan for each facility with recommendations on how to prevent pollution, reduce water and energy consumption, and improve productivity.

North Carolina Department of Environmental Quality

- National Emphasis Area: Food and Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; and Metal Manufacturing and Fabrication
- EPA Grant: \$192,000

The grantee will provide support to businesses, nonprofits, or government entities that commit to establishing an environmental management system (EMS) or set of measurable environmental performance goals. Participants in the program will receive technical assistance on pollution prevention, EMS development and implementation, compliance assistance, and help with regulatory issues. The grantee will provide training focused on EMS development, hazardous materials and waste usage and generation reductions, energy efficiency improvements, and other environmental best practices. Staff will provide on-site assistance at EMS Team meetings, EMS audits, and other P2 assistance related activities.

SOUTH CAROLINA

Clemson University

- National Emphasis Area: Metal Manufacturing and Fabrication
- EPA Grant: \$88,000

The grantee will promote P2 activities within the South Carolina metal industry by identifying sector-specific issues and possible solutions to the release of metals to freshwater in South Carolina. The grantee will work directly with manufacturers to implement source reduction activities in metal manufacturing and fabrication.

TENNESSEE

Tennessee Department of Environmental Conservation

- National Emphasis Area: Food and Beverage Manufacturing and Processing and Auto Manufacturing and Maintenance
- EPA Grant: \$182,000

The grantee will partner with Tennessee Sustainable Spirits (TNSS) to provide on-site technical assistance to spirits producers. The TNSS certification program requires participating spirit producers to submit the previous years' utility data, meet a certain number of sustainability practices identified on the program's sustainability checklist, and participate in an on-site assessment. Facilities will be provided with recommendations to increase facility sustainability and reduce pollution. TDEC will work with Tennessee Technological University Industrial Assessment Center to provide three workshops, six webinars, on-site technical visits, and assessments. TDEC will also partner with Middle Tennessee State University's Fermentation Science Program to start an in-facility technical assistance internship program.

REGION 5 (IL, IN, MI, MN, OH, WI)

ILLINOIS

University of Illinois

- National Emphasis Area: Food, Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; and Metal Manufacturing and Fabrication
- EPA Grant: \$323,928

The grantee will provide on-site P2 energy efficiency technical assistance to manufacturing businesses that have been historically underserved in their communities through its Illinois Conservation of Resources and Energy (ICORE) program. The grantee and its partners will identify 30 small-to-medium sized manufacturers that will benefit most from conservation practices that will reduce emissions. Proposed activities include providing a series of workshops, trainings, individualized support, and personalized waste assessments to these businesses to help them develop source reduction plans.

MICHIGAN

Michigan Department of the Environment, Great Lakes and Energy

- National Emphasis Area: Food, Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; and Auto Manufacturing and Maintenance
- EPA Grant: \$178,810

The grantee will provide Michigan businesses, manufacturers, and communities with pollution prevention training and assistance to reduce amounts of hazardous materials, substances, and pollutants entering any waste stream or otherwise released into the environment. The grantee will provide on-site technical assistance and assessments to help businesses and facilities identify opportunities for energy and water efficiency, hazardous materials reduction, and cost savings. The

grantee will provide off-site assistance in the form of two webinars and two workshops for partners to learn more about P2 best practices.

MINNESOTA

Minnesota Pollution Control Agency

- National Emphasis Area: Metal Manufacturing and Fabrication
- EPA Grant: \$72,406

The grantee will provide P2 technical assistance to businesses in the metal fabrication industry. The primary goal of the project is to help businesses to reduce the use of toxic chemical by identifying safer alternatives. The grantee will also help businesses reduce water and hazardous material use; and will provide outreach and educational materials in the form of webinars and presentations to industry.

OHIO

Ohio Environmental Protection Agency

- National Emphasis Area: Food, Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; and Metal Manufacturing and Fabrication
- EPA Grant: \$36,200

The grantee plans to create and distribute industry specific P2 best management practices based on actual experiences and data collected from organizations participating in its voluntary Encouraging Environmental Excellence recognition program. Ohio EPA estimates that it will recognize 20-40 businesses spanning all five NEA's during the project timeline and will conduct informational interviews and site visits with these businesses to gather information on P2 activities. This information will be used to create five case studies per NEA area, and will be added to the grantee's P2 toolkit database for reference as well as to the grantee's website for public use. In addition, the grantee plans to organize five opportunities for businesses of each NEA to present their pollution prevention strategies and savings.

WISCONSIN

University of Wisconsin

- National Emphasis Area: Food, Beverage Manufacturing and Processing
- EPA Grant: \$411,963

The grantee will work to reduce the energy consumption, fuel usage associated with the manufacture of frozen food. The team will examine the energy performance of low-temperature freezing systems used in food production facilities and identify strategies to reduce energy consumption. By reducing the energy consumption associated with low temperature freezing systems, the operating cost of the freezing system will decrease, saving the facilities money while enhancing the quality of the frozen products by better managing freezing times and product moisture loss. The grantee will conduct an analysis of facilities' air flow patterns; host a freezing systems best analysis round table/workshop event to identify challenges end-users face with their existing freezing systems; provide on-site technical

assistance to assess the current facility performance and identify opportunities to improve energy efficiency; and create a guidance document incorporating all P2 strategies and activities information gained from the assessments and round table event.

REGION 6 (AR, LA, NM, OK, TX)

LOUISIANA

Louisiana State University

- National Emphasis Area: Food, Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; and Metal Manufacturing and Fabrication
- EPA Grant: \$368,000

The grantee will collaborate with other local partners to assist chemical, metal, and food and beverage manufacturers in identifying P2 opportunities and implement cost-effective and energy-efficient technology-based solutions. The grantee's team will prioritize manufacturing companies in environmental justice communities with historically higher health risks and proximity to contaminated sites. The grantee will partner with its team of technical assistance providers to determine best practices for each industry; provide direct pollution prevention assistance to businesses in the region through both on-site assessments and training; expand awareness of P2 strategies through educational workshops and online videos with TAPs; recognize solutions in an awards ceremony and certification program; and document and share best practices with the network.

NEW MEXICO

New Mexico State University

- National Emphasis Area: Food, Beverage Manufacturing and Processing
- EPA Grant: \$190,386

The grantee will provide on-site P2 technical assistance to industries and businesses by expanding its Economy, Energy & Environment (E3) program activities in southern New Mexico and West Texas. The grantee will collaborate with the state's large food and beverage manufacturing sector and develop industry sector-specific case studies that can be accessed via digital and social media platforms. The project will focus on breweries as they relate to the large amounts of energy, chemical cleaners, and water used to produce their products.

TEXAS

University of Texas at Arlington

- National Emphasis Area: Food, Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; and Metal Manufacturing and Fabrication
- EPA Grant: \$368,000

The grantee will work with industrial facilities to link environmental issues to core business concerns by teaching P2 techniques as part of an Energy, Economy & Environment (E3) on-site assessments and

technical assistance. The grantee will make businesses aware of the relationship between operational performance and the environment to enhance implementation of source reduction projects. The grantee will partner with the Texas Manufacturing Assistance Center, a Texas Manufacturing Extension Partnership center, which will provide on-site technical assistance and training through a public-private partnership that aims to deliver comprehensive, proven solutions to manufacturers.

REGION 7 (IA, KS, MO, NE)

IOWA

Iowa Department of Natural Resources

- National Emphasis Area: Food, Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; and Metal Manufacturing and Fabrication
- EPA Grant: \$349,991

The grantee will conduct up to 44 facility P2 assessments, prioritizing food manufacturers, chemical manufacturers, users of hazardous materials, and others looking to reduce hazardous chemical use and conserve energy and water. The grantee will also place 14 P2 interns with selected Iowa businesses to help reduce hazardous materials and conserving energy and water. The grantee will also host a series of workshops and webinars to disseminate P2 information through its Strategic Goals Program and its “EMS In Depth” webinar series.

KANSAS

Kansas State University

- National Emphasis Area: Metal Manufacturing and Fabrication
- EPA Grant: \$350,000

The grantee will pair trained student P2 interns with businesses to provide direct technical assistance by researching current practices and recommending P2 opportunities. The P2 interns and the grantee’s staff work with businesses for 10 weeks, then transfer that assistance through presentations at a roundtable and workshop, conferences, case summaries/studies, webinars, and on-site activities to promote replication. PPI will also provide specific technical assistance available to businesses seeking information about source reduction opportunities and will produce a video series, “60-seconds to P2” to promote P2 best practices and its P2 technical assistance approaches. PPI will also implement an awareness and recognition project to educate businesses and communities, enabling them to implement P2 practices to improve environmental stewardship by adopting more efficient, sustainable, and protective policies, practices, materials, and technologies.

MISSOURI

Missouri State University

- National Emphasis Area: Food, Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; and Metal Manufacturing and Fabrication
- EPA Grant: \$45,710

The grantee will provide on-site provide on-site P2 technical assistance to manufacturers and host training sessions to provide manufacturing personnel with the knowledge and skills to perform their own P2 assessments. The on-site assessments will aim to reduce waste at the source and identify opportunities for improved energy efficiency. Each assessment will generate a process map of the operations with inputs and outputs as well as written report of recommendations, and potential opportunities for student interns to assist with project implementation.

NEBRASKA

University of Nebraska at Lincoln

- National Emphasis Area: Food, Beverage Manufacturing and Processing and Metal Manufacturing and Fabrication
- EPA Grant: \$236,036

The grantee will leverage a partnership with the Nebraska Manufacturing Extension Partnership (NMEP) and the Nebraska Industrial Assessment Center (NIAC) to provide internship-based, P2 technical assistance to at least eight manufacturers in the food processing and metal manufacturing sectors. The grantee will also develop materials to promote P2 practices for these sectors. The P3 program will also develop materials to promote P2 practices for the food and metal sectors and will provide training in source reduction techniques to college students.

REGION 8 (CO, MT, ND, SD, UT, WY)

COLORADO

Colorado Department of Public Health

- National Emphasis Area: Food, Beverage Manufacturing and Processing and Chemical Manufacturing, Processing and Fabrication
- EPA Grant: \$393,783

The grantee will implement an Environmental Leadership Program (ELP) and a P2 internship program that focuses on food and beverage manufacturers and brewery, distillery, coffee roaster, bakery and hemp processing subsectors. The grantee will conduct a minimum of 20 on-site and off-site assessments annually to address energy use, water use, hazardous materials reduction, waste minimization, and cost savings and will create performance summaries for each site. The ELP will conduct 16 technical assessments on-site for potential program partners each year and host an annual awards and recognition event for its partners to showcase successful P2 technique implementation and results. The grantee will partner with Colorado State University to match a minimum of five interns with businesses

to work directly with those businesses to utilize recommendations made in the P2 assessment or on-site visits, and work with the company to implement and/or analyze one or more of the recommendations.

MONTANA

Montana State University

- National Emphasis Area: Food and Beverage Manufacturing and Processing
- EPA Grant: \$498,217

The grantee will provide technical assistance to beverage and food manufacturers to foster increased efficiency and pollution prevention while strengthening partnerships. The grantee will assist businesses in developing replicable, state-of-the-art, lean and environmentally responsible manufacturing plans for their businesses. P2 activities include surveying national brewery industry leaders to identify pollution prevention opportunities and creating a Sustainable Brewery Certification program; a Pollution Prevention Internship program, which will provide students with valuable P2 training and businesses with technical assistance; and the EcoStar Pollution Prevention Award Program, which will recognize small businesses voluntarily taking steps to reduce hazardous and solid waste, maximize efficiencies, conserve energy and water, improve air quality and create a more sustainable model for businesses.

REGION 9 (AZ, CA, HI, NV, AS, GU)

ARIZONA

Arizona State University

- National Emphasis Area: Food and Beverage Manufacturing and Processing and Aerospace Product and Parts Manufacturing and Maintenance
- EPA Grant: \$376,344

The grantee will provide technical assistance to the food and beverage manufacturing and processing and aerospace product and parts manufacturing and maintenance businesses to reduce water and energy use. The grantee will develop a protocol for virtual site assessments and deliver four virtual assessments, including recommendations and follow up. The grantee will also develop three online training courses, including course on assessing water and energy use for food and beverage manufacturers and processors, a course on using water sensors, and a course that transfers lessons learned from the grantee's food and beverage work to the aerospace industry.

CALIFORNIA

University of California at Berkeley

- National Emphasis Area: Chemical Manufacturing, Processing and Fabrication
- EPA Grant: \$194,832

The grantee will research safer chemical alternatives to perfluorinated and polyfluorinated alkyl substances (PFAS) in the carpet and food packaging industry sectors and educate manufacturers on their findings via webinars and roundtable meetings. The project seeks to inform these industries about the hazards found in formulations, tools to use in performing alternative and chemical hazard assessments,

training in how to use the tools, and case studies of safer substitutions and a broad methodology for finding alternatives.

NEVADA

Western Nevada College

- National Emphasis Area: Food and Beverage Manufacturing and Processing and Chemical Manufacturing, Processing and Fabrication
- EPA Grant: \$345,108

The grantee will provide training and technical assistance to 25 food and beverage manufacturers and another 20 businesses in auto repair and maintenance. The grantee will also encourage manufacturers and businesses to join a statewide green business program that hosts P2 trainings for brewers, generalized P2 for food manufacturers and automotive repair and maintenance shops.

REGION 10 (AK, ID, OR, WA)

IDAHO

Idaho Department of Environmental Quality

- National Emphasis Area: Food, Beverage Manufacturing and Processing; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; and Metal Manufacturing and Fabrication
- EPA Grant: \$190,000

The grantee will aim to reduce hazardous material use and air emissions in aircraft and automotive maintenance and metal fabrication. It will provide direct technical assistance to facilities that use high volatile organic compound or persistent, bioaccumulative, and toxic solvents to encourage a changeover to safer alternatives and employ Spray Efficiency Techniques and Research (STAR) training. The grantee will hold P2 workshops for manufacturing businesses, utilities, local governments, and the public; a minimum of 170 direct technical assistance efforts for waste reduction; and a minimum of 50 technical assistance efforts targeting air emissions reductions. The grantee will also offer the Green the Green Belt internship program targeting food processing and aerospace manufacturing sectors. The grantee in partnership with TechHelp Idaho and North Idaho College's aerospace program will train the targeted sectors on Lean Six Sigma tools, as well as pair interns with participating companies to identify opportunities for waste reduction, facilitate the collection of data from those teams, conduct data analysis, make improvement recommendations, and report on adopted measures and outcomes.

OREGON

Oregon Department of Environmental Quality

- National Emphasis Area: Food, Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; and Metal Manufacturing and Fabrication
- EPA Grant: \$335,950

The grantee will implement an internship program that places students with businesses in the advanced manufacturing, food and beverage, and seafood processing sectors to conduct P2 research. The grantee will also train agency staff and businesses on assessing and selecting safer alternatives and approaches to reduce toxics. The grantee will offer the Pacific Northwest OSHA Education Center's Transitioning to Safer Chemicals Course, alternatives assessment training to support implementation of the Toxics Free Kids Act, and training for government purchasing officials and commercial product vendors on the use of EPA Safer Choice. Continuing with work carried out from a previous P2 grant, the grantee will complete Phase II of the Metals Outreach Initiative by offering P2 best practices and tools, providing off-site technical assistance, and facilitating training and collaboration opportunities for 50 businesses. In partnership with the Pollution Prevention Resource Center, the grantee will also enhance Oregon's EcoBiz certification program. Five new partners will receive guidance on implementation of the certification program for automotive businesses.

WASHINGTON

Washington Department of Ecology

- National Emphasis Area: Food, Beverage Manufacturing and Processing; Chemical Manufacturing, Processing and Fabrication; Auto Manufacturing and Maintenance; Aerospace Product and Parts Manufacturing and Maintenance; and Metal Manufacturing and Fabrication
- EPA Grant: \$305,742

The grantee will partner with Washington State University Extension Energy Program and Food Northwest to conduct energy audits and environmental assessments to six to ten businesses. The grantee will also partner with Impact Washington to address the use of hazardous substances and emission of hazardous air pollutants for four to six businesses. Food Northwest will work with WDOE to provide pH training to 10 to 20 businesses in the food and beverage sector. The grantee plans to conduct visits to food processors to for Cleaning-in-Place system optimization and to identify opportunities that significantly reduce the use of the ozone-depleting refrigerants. In partnership with Pollution Prevention Assistance, the grantee will award Safer Brake Cleaner vouchers to 50 general automotive repair businesses in the state. In collaboration with the Toxics Use Reduction Institute lab, the grantee will collect ten before and after amounts of cleaning solvents to find safer alternatives for cleaning samples of parts that are currently cleaned with hazardous solvents. The grantee will also provide green chemistry training to K-12 students and teachers in Washington state and nonprofit entities. In addition, in partnership with the Pollution Prevention Resource Center, the grantee will conduct up to 20 virtual reality spray efficiency trainings.