2014 Southwest Ohio Pollution Prevention (P2) Internship Program

Internship Application Handbook

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Background

**Hamilton County**
Hamilton County Recycling and Solid Waste District (District) is a County organization, established by State law, responsible for ensuring that the County achieves State mandated goals for recycling and waste reduction. The District achieves these goals through the implementation of waste reduction programs targeted to residents, communities, businesses, and schools. It provides a variety of programs aimed at assisting business and industry in reducing environmental impact through recycling and waste reduction.

In 2004, the District created the summer Pollution Prevention (P2) Internship to provide academia, industry, and local government the ability to collaborate to improve the local environment and to divert materials from the local landfill. This program was the foundation for the current Southwest Ohio P2 Internship Program, through which upper-level undergraduate or graduate students are paired with local companies during an intense 12-week internship to further the companies’ environmental goals pollution prevention and energy efficiency.

**Butler County**
Butler County Recycling & Solid Waste District (District) promotes recycling and waste reduction through a variety of services and programs targeting residents, commercial businesses and industries in Butler County.

Beginning in 2007, the District invited local manufacturers to participate in the Pollution Prevention Internship Program. The program selectively places two full-time undergraduate or master’s level interns in local industries for a 12-week summer program. The goals of the program are to:

- Evaluate, recommend, and implement cost-saving waste reduction and energy efficiency solutions for local companies;
- Offer Ohio students professional experience in an industrial setting;
- Develop successful partnerships with Butler County industries, which enhance the value and implementation of pollution prevention strategies countywide.

The District also provides annual grant funding to local businesses, industries, government, schools and non-profits to support waste reduction strategies.

**U.S. EPA**
In March 2010, the U.S. EPA awarded $61,000 as part of its Source Reduction Assistance Grant
to TechSolve, Butler County and Hamilton County Recycling & Solid Waste Districts. The purpose of the grant is to develop pollution prevention expertise and capacity in the southwest Ohio region and apply that knowledge in a manufacturing setting. Grant funds provide intern training and technical assistance to the partner organizations. Training efforts are led by TechSolve engineers.

**TechSolve, Inc.**
TechSolve Inc. is a professional services organization that helps its clients achieve top-line growth, bottom-line savings and improved profitability. For more than 20 years, TechSolve Inc. has helped businesses around the globe identify and implement process changes that will make them more successful. In the past four years, TechSolve’s team of business specialists, engineers and scientist have helped their clients realize cost savings of more than $200 million with a sales impact of over $1,073 million.

**Private Enterprise**
Over the past seven years, the P2 intern program in Butler, Hamilton and Montgomery counties has partnered with the following companies to save money and improve environmental impact:

- Aeronca
- Aptalis
- Da-Lite Screen Company
- Deceuninck North America
- Dell
- Duke Energy
- Formica
- General Mills
- HB Fuller
- Lanxess Corp.
- MillerCoors, LLC
- Siemens Industry, Inc.
- Skyline Chili, Inc.
- Smart Papers Holdings, LLC
- St. Bernard Soap Co.
- Tedia Company
- 2trg
- Patheon, Inc.
- TriHealth
- Valeo Climate Control
Goals

While the specific economic and environmental goals for each host company are unique, some common goals apply to the Southwest Ohio P2 Internship Program. They are:

- Help companies implement cost-saving solutions
- Help companies meet environmental goals
- Encourage economic development in Butler, Hamilton and Montgomery counties
- Offer student interns hands-on experience in an industrial setting
- Encourage technically skilled students to stay in Ohio
- Provide Butler County, Hamilton County and Montgomery Solid Waste Districts with results and data to measure success

Some of the economic benefits for businesses participating in the internship are:

- Reduced operating costs
- Reduced compliance costs
- Reduced exposure to future liability costs
- Improved worker safety
- Improved image
- Increased productivity
- Realized continuous improvements

Environmental benefits for businesses may include:

- Prevent pollution
- Reduce waste at the source
- Increase recycling
- Divert waste from landfill
- Increase energy efficiency
- Conserve resources
Roles and Responsibilities

Student Interns
Student interns will:

- Work full-time (35-40 hours per week) for the duration of the internship, provide his/her own transportation, and comply with all company policies, regulations and aspects of confidentiality regarding the company’s processes and products.
- Attend mandatory P2 training in May.
- Establish a work schedule and timeline for projects with company supervisor.
- Develop a working knowledge of plant processes and determine how and at what rate waste or emissions are currently produced in processes at the company.
- Research and evaluate process variables, economic factors and options for reducing waste.
- Develop hypotheses and prioritize potential solutions.
- Develop cost comparisons between existing procedures and proposed suggestions.
- Identify, recommend and, as time permits, implement options/strategies with support from the host company, and the partnering solid waste district.
- Maintain weekly contact with the county advisor and TechSolve engineers.
- Notify the county advisors if for any reason planned projects are modified, added or redirected.
- Make arrangements with company supervisor if he/she is unable to work the required workweek due to personal or medical issues.
- Submit a daily log of work and weekly progress reports.
- Provide project results in a final intern report and provide a PowerPoint presentation summarizing results to all partner industries and participating interns in the 2014 P2 program.

Refer to “Reporting Requirements” section of this handbook for specifics on project deliverables required by Butler County, Hamilton County and Montgomery County Solid Waste Districts.
Host Company Supervisor
This person is responsible for overseeing the intern’s daily work and offering assistance to accomplish tasks. Company supervisors will:

- Develop a project work plan/timeline in conjunction with the intern, county advisors and TechSolve consultant.
- Provide ongoing direct daily supervision of the intern.
- Provide the intern with appropriate resources to work, including a desk or work table, access to a computer with Internet capabilities, a telephone, fax machine, and safety equipment.
- Inform management and other employees about intern and project goals and objectives.
- Facilitate employee cooperation with the intern to ensure that the intern receives the assistance and information needed to accomplish the project.
- Ensure safety rules and protocols are observed by the intern. Make certain the intern understands the hazards of chemicals and/or equipment and understands the company’s personal protection program and requirements.
- Review project progress on a regular basis. Periodically consult with the project technical advisor regarding project development and status and satisfaction with the intern’s work.
- Review final project report and presentation for accuracy and observe company confidentiality prior to approving case study for public distribution.
- Evaluate the intern’s performance and the overall program results by completing a project evaluation form at the conclusion of the P2 program.
- Implement cost effective waste reduction measures identified by the intern, when feasible.
- Provide Butler County, Hamilton County, and Montgomery County Solid Waste Districts with feedback describing the benefits of the P2 projects, i.e. figures on waste or pollution reduced as well as cost savings and pollution prevention measures achieved as a result of the intern program.

County Advisors (Solid Waste District)
Each county advisor will:
- Coordinate a planning meeting and on-site tour of P2 facilities.
- Work with TechSolve to develop and implement intern training.
- Communicate weekly with P2 interns to assess progress on projects.
- Provide guidance in the collection of technical information, offer resource leads and assist the intern with implementing solutions.
- Assist in the review of project designs and solutions proposed for implementation.
- Regularly consult with the company supervisor regarding progress on P2 projects, and the status of the intern’s work.
- Review and guide the daily, weekly and final P2 project reports and assist with the intern’s PowerPoint presentation.
TechSolve Engineers
TechSolve engineer will:
- Lead pre-visit and on-site tour of facility applying for P2 program intern.
- Develop and implement intern training.
- Provide guidance to interns as they embark on P2 projects.
- Help review intern reports and presentations as needed.
- Coordinate energy conservation guidance with the University of Dayton Industrial Assessment Center.

Reporting Requirements
P2 interns are responsible for maintaining a daily work log, submitting a weekly progress report, and writing a final report. Reports should be clear and concise. Report documents should be sent by email to the county advisor and P2 supervisor. The reports should be numbered, single-spaced, and double-sided. Interns will present their findings and recommendations using PowerPoint software at a wrap-up session with participating P2 interns from the three counties, P2 partner industries, TechSolve, and county advisors from Butler County, Hamilton County and Montgomery County Solid Waste Districts.

Daily Work Log
Interns will maintain a daily work log to track progress on P2 project(s). Daily work logs should include the following:
- Project specifics and particular issues being researched.
- Technical questions that arise.
- Data and observations. Keep notes on process data and record observations. Document any assumptions you may have made and any calculations used to determine numbers (i.e., flow rates). These will be valuable for communicating outcomes and recommendations later on.
- Document meetings attended and identify those participating.
- Maintain a list of resources both inside and outside the participating industry that are able to assist with P2 projects. Keep a list of contact information and estimated costs for services.

Weekly Progress Report
Information from daily work logs will be used to prepare a weekly progress report and a final P2 project report. These reports will keep company supervisors and technical advisors up-to-date on project progress. Progress reports should include a summary of results and
conclusions from the week’s work and projected activities for the upcoming week. These reports should be sent by email to company supervisors and county advisors at the end of every work week.

Final Report
Final reports should include the following items. Company personnel should find information in the final report to begin/implement project recommendations.

- Cover
- Table of contents
- Abstract
- Background
- Project
  - Incentives for change / Project Need
  - Process description
  - Project activities
  - Challenges
  - Measurements, outcomes
  - Recommendations & Project Status
  - Appendices

Background
- Identify key people at the company as well as any outside resources valuable in shaping the project(s) outcomes; include all names, company affiliation, titles, project roles and contact info.
- Company description should include a company profile, address, telephone and fax numbers; category of products or services and number of employees.

Project
- Incentives for change—outline the reasons why the company wanted to undertake this project; include impact information related to regulations, raw material costs, waste disposal or management costs, etc.
- Process Description—give an overview of the processes on which the project focused; charts and a floor plan may be useful in depicting process flow.
- Project activities
  - Project overview
  - Purpose of the project
  - Project status
- Challenges – identify obstacles or barriers to implementing recommendations. What alternative practices were identified but not recommended and why.
- Measurements and outcomes
A Pollution Prevention Collaboration between Hamilton County, Butler County and Montgomery County Solid Waste Districts and TechSolve

- Baseline quantity of waste/emissions (use the most appropriate measure, e.g. gallons of hazardous waste, tons of solid waste/emissions, kWh or Therms of energy)
- Identify waste reduction opportunities
- Identify overall environmental and economic benefits of implementing intern recommendations

<table>
<thead>
<tr>
<th>Project</th>
<th>Annual Cost Savings</th>
<th>Environmental Results</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waste reduction</td>
<td>$115,000</td>
<td>250 tons/year</td>
<td>Implemented</td>
</tr>
<tr>
<td>Water conservation</td>
<td>$15,900</td>
<td>2,400,000 Gallons</td>
<td>Implemented</td>
</tr>
<tr>
<td>Heat recovery</td>
<td>$85,000</td>
<td>95,000 Therms</td>
<td>Recommended</td>
</tr>
<tr>
<td>Lighting improvements</td>
<td>$35,840</td>
<td>704,000 kWh/year</td>
<td>Recommended</td>
</tr>
</tbody>
</table>

Project status falls into one of three categories:

- Implemented
- Recommended (not yet implemented)
- Not recommended (not feasible)

Appendices should augment the narrative of the report and include supporting documents such as: a bibliography of useful written documents and resource materials, test results, MSDS/technical sheets, calculations, process drawings and regulatory background.
# Contact Information

## Technical Advisors

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>Address</th>
<th>Phone</th>
<th>Email</th>
</tr>
</thead>
<tbody>
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## County Advisors

<table>
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</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>