2016 Internship Program
Handbook for Participants

Program Partners

Butler County
Recycling & Solid Waste District
130 High St.
Hamilton, Ohio 45011
www.butlercountyrecycles.org

Montgomery County
Solid Waste District
2550 Sandridge Drive
Dayton, Ohio 45439
www.mcswd.org

Hamilton County
Recycling and Solid Waste District
250 William Howard Taft Rd.
Cincinnati, Ohio 45219
www.hamiltoncountyrecycles.org

TechSolve, Inc.
6705 Steger Dr.
Cincinnati, Ohio 45237
www.techsolve.org
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Background

**Hamilton County**
The Hamilton County Recycling and Solid Waste 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 promotes recycling and waste reduction through a variety of services and programs targeting residents, schools, commercial businesses and industries in Butler County.

Beginning in 2007, the District invited local manufacturers to participate in the P2 Internship Program. The program selectively places two full-time undergraduate or master’s level interns in local businesses for a 12-week summer program. The goals of the program are to:

- Implement cost-saving waste reduction 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.

Since its inception, the Pollution Prevention Internship program has collectively resulted in anticipated savings of more 1.7 million dollars to participating Butler County industries.

**Montgomery County**
Montgomery County Solid Waste District provides waste disposal services for Montgomery and surrounding counties. It also provides recycling, recovery, reuse, waste reduction and litter prevention programs for Montgomery County schools, communities and businesses.

In 2012, Montgomery County joined the P2 collaboration and began to recruit businesses to participate in the internship program. Montgomery County has a goal to provide internship opportunities to retain talented young professionals in the region. The P2 Internship program provides a valuable resource to connect companies and outstanding students while supporting the mission of promoting sustainability countywide.
TechSolve, Inc.
TechSolve 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 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.

U.S. EPA
In March 2013, the U.S. EPA awarded a grant as part of its Source Reduction Assistance program to TechSolve and the partner solid waste management districts. The purpose of the grant was 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.

Private Enterprise
Over the past few years, intern programs in Hamilton, Butler, and Montgomery Counties have helped the following companies save money and reduce their environmental impact:

- Aeronca
- Aptalis
- Dell
- Da-Lite Screen
- Deceuninck North America
- Duke Energy
- Formica
- General Mills
- H B Fuller
- Lanxess
- MillerCoors, LLC
- Patheon Pharmaceutical
- Select Industries
- Siemens Industry, Inc.
- Skyline Chili, Inc.
- Smart Papers Holdings, LLC
- St. Bernard Soap Company
- Sugar Creek
- Tedia Company
- Valeo Climate Control
Program Goals

Although the specific economic and environmental goals for each host company will be unique, some general 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 students hands-on experience in an industrial setting.
- Encourage technically skilled students to stay in Ohio.
- Provide county solid waste management districts with data and success measures.

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 the project 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 rank potential solutions.
- Develop a cost comparison between the use of existing procedures and proposed suggestions.
- Identify, recommend, and, as time permits, implement options/strategies with support from the host company and program technical advisors.
- Maintain weekly contact with the county advisors and TechSolve engineers.
- Notify the county advisors if for any reason planned projects are modified, added to, or redirected.
- Make arrangements with company supervisor if he/she is unable to work the required workweek due to personal or medical issues.
- Keep a daily log of work and submit weekly progress reports.
- Provide project results in a final internship report and an oral presentation with visual aids (e.g., PowerPoint).

Refer to the “Reporting Requirements” section of this handbook for specifics on project deliverables required by your sponsoring county’s solid waste district.

Host Company Supervisor

This person will be responsible for overseeing the intern’s work and offering assistance needed 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 the intern and the 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.
- Assure the intern works in a safe environment. Make certain the intern understands the hazards of chemicals and/or equipment they work with 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 company confidentiality standard and approve for public distribution.
• Evaluate the intern’s performance and the overall program by completing a program and project evaluation at the conclusion of the project.
• Implement cost-effective waste reduction measures identified by the student, when feasible.
• Provide the Butler, Hamilton, or Montgomery County solid waste management district with feedback describing the benefits of this project (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
Each county advisor will:
• Help conduct pre-visit and on-site tour of facility.
• Work with TechSolve to develop and implement intern training.
• Talk weekly with the intern to assess progress on the project.
• 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 any options proposed for implementation.
• Periodically consult with the company supervisor regarding project development and status and satisfaction with the intern’s work.
• Review the daily, weekly, and final project reports and assist with the intern’s PowerPoint presentation.

TechSolve Engineers
TechSolve engineers will:
• Lead pre-visit and on-site tour of facility.
• Develop and implement intern training.
• Provide technical guidance with intern projects.
• Help review intern reports and presentations as needed.
• Coordinate energy conservation guidance with the University of Dayton Industrial Assessment Center.
Reporting Requirements

Interns will be responsible for maintaining a daily work log and submitting weekly progress reports and one final report. Reports should be clear and concise. Interns will present their findings and recommendations using PowerPoint software at a wrap-up session with representatives from participating companies, TechSolve, and the Butler, Hamilton, and Montgomery County solid waste districts.

Daily Work Log
Use a daily work log to track information about assigned project(s). Daily work logs should include the following:

- Project specifics and particular issues being studied.
- Technical questions that have arisen.
- 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.
- Meetings attended and who was present.
- Resource people and their telephone numbers and addresses. Keep a list of resource people that you have corresponded with, met, or talked to.

Weekly Progress Report
Information from daily work logs will be used to prepare short weekly progress reports and a final 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 following week. These reports should be sent by email to company supervisors and technical advisors at the end of every work week.

Final Report
Company personnel should be able to follow the information in the final report to begin/implement project recommendations. Final reports must include the following content:

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

- Identify the key people at the company as well as any outside resources who were particularly valuable in shaping the project(s); include all names, company affiliation, titles, project roles and contact information.
- 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 — Summarize 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 — Describe what was learned about obstacles to implementing changes to process. What alternative practices were not recommended and why.

- Measurements and outcomes
  - 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).
  - Outcomes or main waste reduction opportunities.
  - Identify overall environmental and economic benefits of implementing intern suggestions. Summarize project outcomes in a table such as the one shown here:

<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, SDS/technical sheets, calculations, process drawings, and regulatory background.
Southwest Ohio P2 Internship Program

A Pollution Prevention Collaboration among the Hamilton, Butler, and Montgomery County Recycling and Solid Waste Districts and TechSolve, Inc.

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**Tentative Schedule for 2016 Season**

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Program Task</th>
<th>Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Week of May 23, 2016</td>
<td>Interns start at host companies.</td>
<td>Intern, Company Supervisor</td>
</tr>
<tr>
<td>2*</td>
<td>5/31 – 6/3</td>
<td>P2 Training at TechSolve</td>
<td>Interns, TechSolve, County Advisors, Host Company Reps</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>Interns on the job at host companies.</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td>Interns on the job at host companies. Weekly report due at end of week.</td>
<td>Interns and Host Company Technical Advisors (as needed)</td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>6/29/2016</td>
<td><em>Intern mid-term meeting at TechSolve. Reports and presentations will be discussed.</em></td>
<td>Interns, TechSolve Advisors, County Advisors</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td></td>
<td>Interns on the job at host companies. Weekly report due at end of week (except week 12).</td>
<td>Interns and Host Company Technical Advisors (as needed)</td>
</tr>
<tr>
<td>10</td>
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<td>12</td>
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</tbody>
</table>

**8/4/2016** **Capstone presentations and final reports at TechSolve.** Interns, Host Companies, Technical Advisors

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*Training Week*

- During Week 2, interns will attend and participate in Pollution Prevention Internship Training. This is a 4-day program and will run from Tuesday, May 31, through Friday, June 3, 2016, during normal business hours. Host companies are invited to take advantage of the training sessions and are welcome to send other company personnel who might benefit from the entire program or a particular session.

- Host companies are asked to send a representative on Thursday, June 2, to do a brief presentation about your company and plans for the intern projects.
Program Partner Contact Information

Technical Advisor to Interns and Host Companies

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County P2 Intern Advisors

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