TOXICS REDUCTION PROGRAM

2023 Annual Report

DEPARTMENT OF ECOLOGY
State of Washington

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INTRODUCTION

As we navigate the modern landscape of environmental challenges, the Toxics Reduction Program stands firmly at the forefront. Our vital mission is to protect Washington's residents and environment by minimizing and eliminating the impacts of toxic chemicals and hazardous waste. Through our pollution prevention (P2) technical assistance program, we've partnered with businesses across the state, helping them reduce their environmental footprint and contribute to a cleaner, healthier future.

This marks another year in which the P2 technical assistance team collaborated with Washington businesses to achieve tangible outcomes toward a healthier tomorrow. We are immensely proud of the collective progress we've made in 2023. In this report, you'll discover:

- Project results demonstrating significant reductions in toxic chemical use, hazardous waste generation, natural resource use, and business costs.
- Inspiring stories of businesses transforming their operations to embrace sustainable practices and innovative strategies.
- A renewed commitment to environmental justice, striving for equitable access to clean air, water, and a healthy environment for all Washingtonians.

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OUR **IMPACT**

Washington State pollution prevention

The P2 technical assistance team recognizes the vital role businesses play in safeguarding our environment. To support their efforts towards sustainability, Ecology requires businesses that generate medium and large quantities of dangerous waste to submit a P2 plan.[1] This plan helps businesses organize their pollution prevention opportunities and track their progress toward voluntarily reducing hazardous substance use and waste generation. Businesses that submit a P2 plan must pay the Hazardous Waste Planning Fee,[2] which provides crucial funding for P2 planning and technical assistance.

Washington businesses that prepared P2 plans in 2023[3] identified numerous ways to save money, including:

- Recycling hazardous waste onsite.
- Upgrading lighting fixtures to LED technology.
- Conducting an inventory clean-out.
- Identifying safer chemical alternatives.

These are just a few examples of the potential financial and environmental benefits of a P2 plan.

1 app.leg.wa.gov/WAC/default.aspx?cite=173-307-015
2 app.leg.wa.gov/WAC/default.aspx?cite=173-305-210
3 Numbers reflect reductions and savings achieved in 2022 that were reported by Washington State businesses in 2023.

Our technical assistance in 2023

Each year, we set our sights on tangible impacts, driving projects with businesses that demonstrably reduce at least 10 percent of toxic chemicals, emissions, hazardous waste, or resource consumption.

In 2023, the team:

- Engaged with **420** businesses that submit P2 plans.
- Provided **122** P2 technical assistance site visits.
  - » Identified P2 opportunities during **46** of these site visits.
  - » Worked on **17** P2 projects during these site visits.

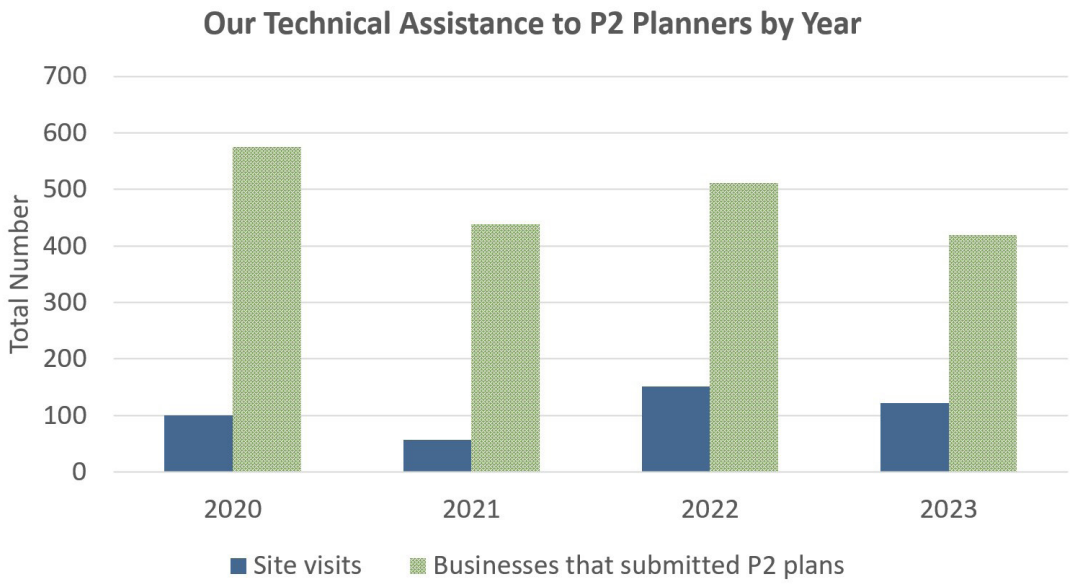

Figure 1. Number of site visits and businesses that submitted P2 plans since 2020.

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In 2023, our **P2 grant program and technical assistance projects** helped Washington businesses achieve an estimated:

- **234,307**-pound reduction of toxic chemicals used and dangerous waste generated.
- **$995,146** savings due to waste reduction, process efficiency, water conservation, and electricity conservation.

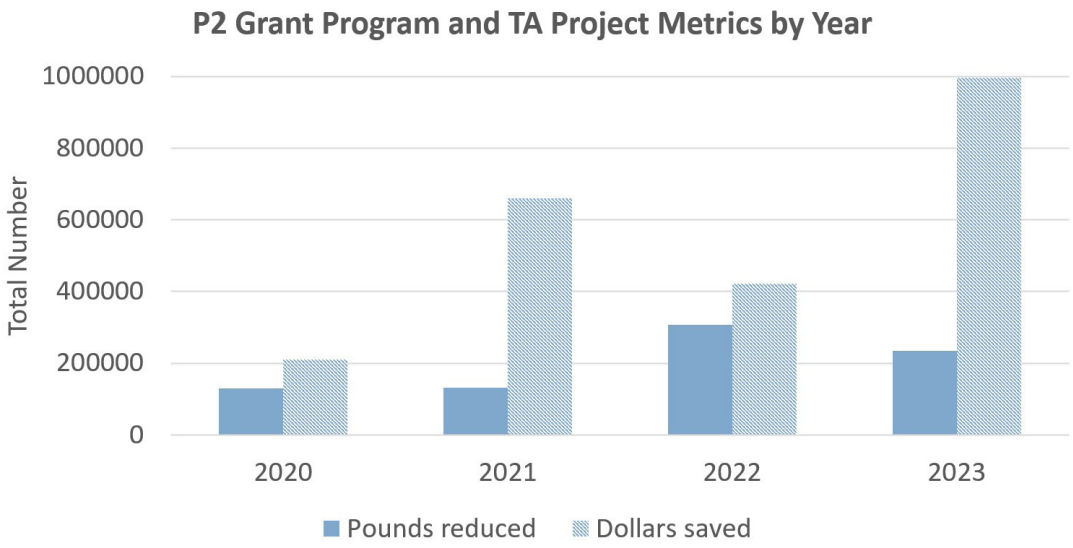

Figure 2. Pounds of toxics and waste reduced and dollars saved since 2020.

POLLUTION PREVENTION **GRANTS**

The Environmental Protection Agency's P2 Grant program[4] allows us to partner with diverse entities to bring P2 initiatives to life. With this funding, we collaborate with businesses, government agencies, and nonprofit organizations to share knowledge, exchange best practices, and celebrate P2 successes.

Since 2018, we've applied about $2.2 million to pollution prevention through this program. In 2023, we achieved these impressive milestones:

- Collaborated with **21 partners**.
- Engaged with **43 businesses**.
- Held **19 trainings and workshops**.
- Published **44 resources**, including educational resources, case studies, and reports.

P2 grant highlights

Energy-efficiency audits

Our collaboration with leading energy efficiency consultants identified a total of $20,800 in annual savings for businesses in Eastern Washington. With P2 grant funds, our partners identified low-cost and capital energy savings opportunities at two metal manufacturing facilities. We prioritized facilities based on environmental justice considerations in the surrounding community, such as the proximity to pollution sources and the socioeconomic makeup of the area. Implementation is underway, and we're excited to measure the full impact of the recommendations in the coming year.

Lean and Green

The P2 grant funds our Lean and Green program—a partnership with the state's manufacturing extension partner, Impact Washington. It continues to generate massive savings and reductions in hazardous waste and toxic chemical use for businesses across industries such as metal finishing and food manufacturing. Impact Washington's expert engineers and specialists discover efficiencies, from targeted equipment upgrades to innovative bath life extensions for electroplaters. This win-win proves that partnering with local experts, empowered by grant funding, unlocks both sustainability and profitability for Washington businesses.

4 ecology.wa.gov/Pollution-prevention-grants

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Safer products

The P2 grant promotes chemical safety by making safer products more available and easier to identify. Safer products are those that meet stringent health and environmental criteria. Ecology partnered with several organizations to develop resources that help businesses and communities transition to less hazardous and safer-certified products. A few initiatives from 2023 include:

- Providing access to Toxic Use Reduction Institute's (TURI) cleaning laboratory[5] for businesses to compare toxic cleaners with safer alternatives.
- Providing consumer information[6] in 16 different languages. This helps us bring equitable access to chemical safety to communities that are disproportionately exposed to environmental hazards.
- Partnering with Zero Waste Washington[7] (ZWW) to develop a hazard assessment report for their furniture donation program. This report helps ZWW phase out high-toxicity products in their refurbishing process, preventing hazardous materials from entering homes of refugees and low-income families.

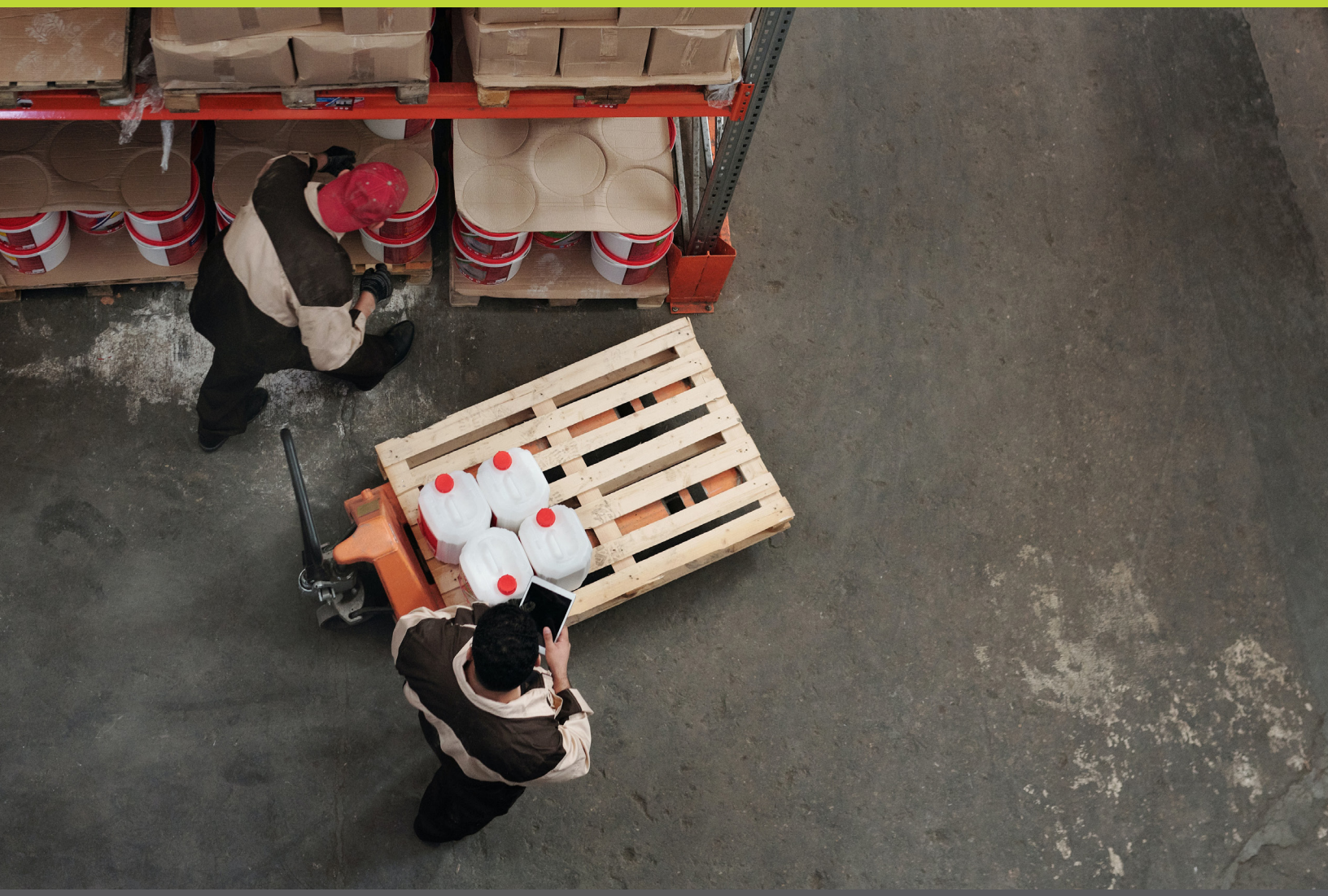
Washington Applied Sustainability Internship

Building on its success from previous years, the 2023 Washington Applied Sustainability Internship (WASI) program placed four interns at host businesses in Washington to analyze, recommend, and implement P2 opportunities. The 2023 WASI projects[8] resulted in quantifiable cost savings and reductions in dangerous waste generation and solid waste disposal. These projects not only delivered financial and environmental benefits, but also provided youth with hands-on experience, preparing them for leadership roles in P2 and driving future environmental progress.

5 www.turi.org/Our_Work/Cleaning_Laboratory
6 apps.ecology.wa.gov/publications/SummaryPages/2104036.html
7 zerowastewashington.org
8 wsg.washington.edu/students-teachers/fellowships/wasi-case-studies/

BUSINESS **SUCCESS STORIES**

At the heart of pollution prevention are the passionate individuals and dedicated businesses leading the charge. Last year, we worked with inspiring businesses who transformed challenges into opportunities, proving that P2 doesn't just minimize their environmental footprint, but maximizes the impact on our communities and economy.



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Landing a win for the planet

AeroTEC (short for "Aerospace Testing, Engineering, and Certification") has been developing flight technology for the last 20 years. Their Moses Lake Flight Testing Center provides aerospace development and a testing space for innovators in this field, from experimental electric planes to massive 737 refurbishments.

With constant evolution comes unique challenges when it comes to hazardous substance use and dangerous waste generation. The Ecology P2 technical assistance team helped AeroTEC navigate these complexities and take their sustainability game to new heights.

One challenge involved de-fueled jet fuel, which is unusable for commercial flights but is costly to dispose of properly. Our team worked with AeroTEC to find a safe and legal alternative to hazardous waste disposal, such as repurposing the fuel for farm equipment. In 2022, AeroTEC disposed of 200 gallons. In 2023, after our technical assistance, they repurposed all of that year's fuel — 70 gallons. This shift diverted hazardous waste from landfills and saved transportation and disposal costs. Imagine the environmental impact if this creative solution catches on — hundreds, even thousands of gallons of jet fuel could be repurposed every year.

AeroTEC is also taking control of their chemical footprint. In 2023, they implemented a new digital inventory system to help them streamline chemical use onsite, minimize waste, and eliminate over-ordering. This tool, combined with their recently developed lists of environmentally preferred alternatives, empowers AeroTEC to make informed and sustainable choices, one chemical swap at a time.

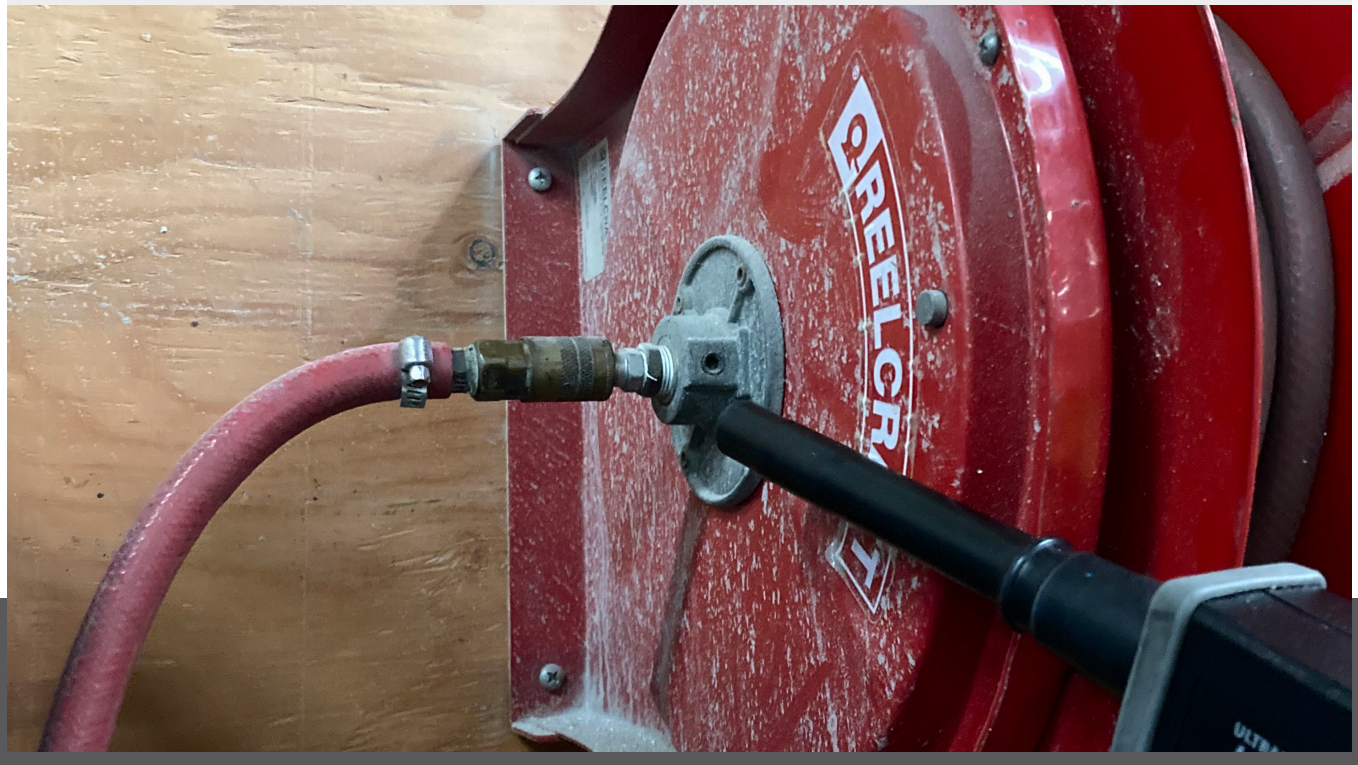
By embracing proactive hazardous waste reduction and streamlining operations, they've improved worker safety and reduced costs, proving that innovation doesn't just take flight in the skies, but on the ground, too.

Small leaks, big impact

Compressed air is often used in industrial and manufacturing settings for a variety of purposes, from powering machinery to cleaning equipment. However, leaks in these systems can be surprisingly common and lead to significant energy waste and cost increases. Mikron Industries (Mikron) in Kent, Washington, manufactures custom window and door fixtures. This requires round-the-clock compressed air in many of their systems. Mikron teamed up with the P2 technical assistance team to conduct an air leak audit, and the results were astonishing.

Armed with ultrasonic leak detection equipment, the P2 team pinpointed a staggering 51 compressed air leaks scattered throughout much of the Mikron site. By analyzing the size and severity of each leak, they mapped out a clear picture of Mikron's potential cost and energy savings. The audit report determined that Mikron stood to save an estimated $13,136 per month and $157,600 per year. With repair recommendations in hand, Mikron took action. Nine months later, the results spoke for themselves. Analysis of Mikron's power bills revealed a 3 percent to 10 percent reduction in energy use by compressed air systems, translating to an average monthly savings of around $4,000.

Mikron's story is an excellent example of how seemingly small issues can have a ripple effect. Reduced energy bills mean a lighter footprint on the planet and sustainable savings. Improved equipment performance keeps production humming smoothly, while lower maintenance costs free up resources for future innovation. It's a win-win for Mikron, our environment, and the community.



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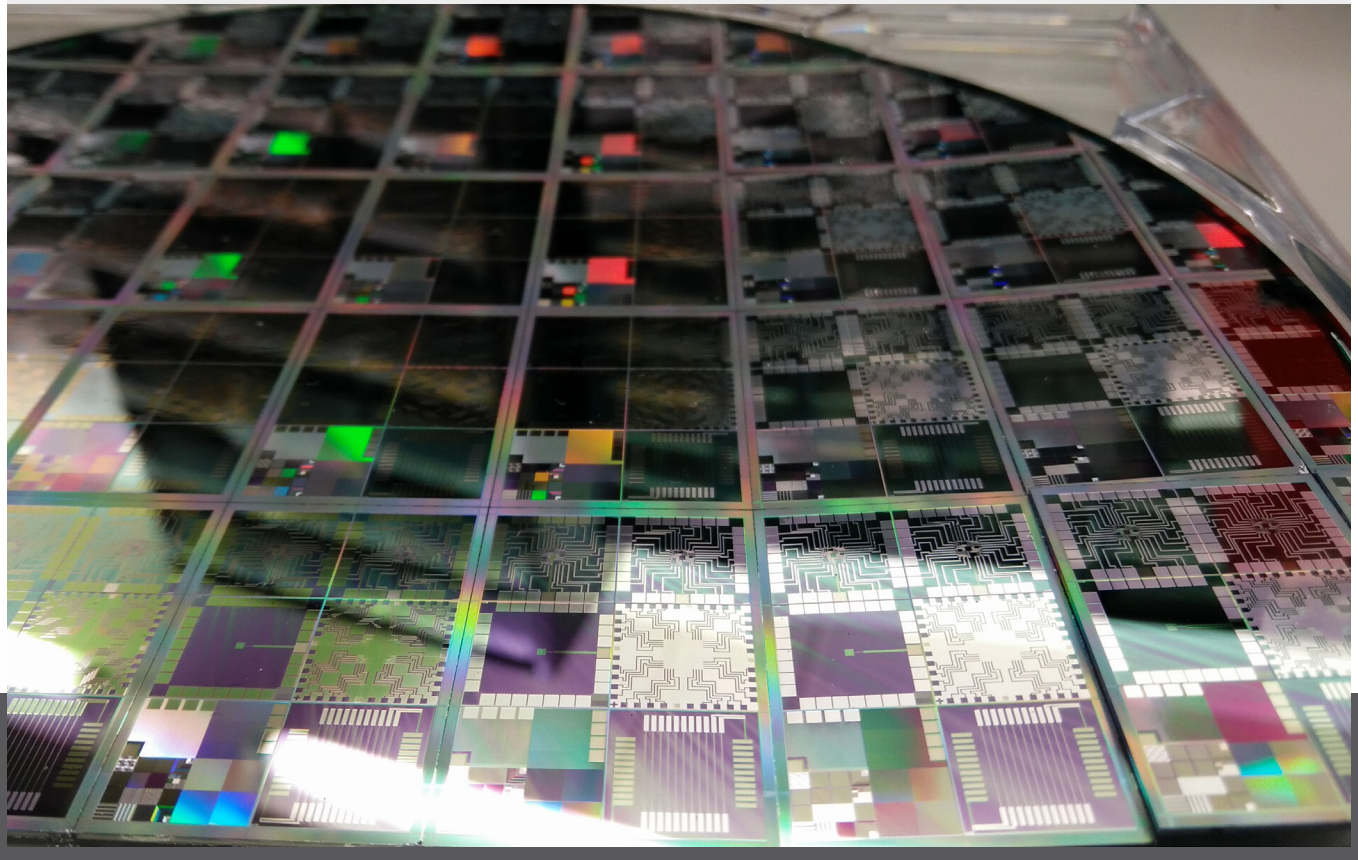
From sludge to sustainability

In the southwest corner of the state lies an electronic device manufacturing company called TSMC Washington, LLC. In chasing the zero-waste-to-landfill dream, they're turning a potential environmental threat into a P2 opportunity. Their wafer production, crucial for powering countless everyday devices, generates heavy silica and calcium fluoride sludge, which requires costly transportation and disposal. Instead of adding to the mountains of landfill waste, TSMC Washington worked hand-in-hand with the P2 team to identify possible sludge reuse options.

After a toxicity characteristic leaching procedure test confirmed the sludge as non-toxic, TSMC Washington and the P2 team conducted research that revealed the sludge's hidden potential as an additive for concrete production. With a nearby cement manufacturing partner on board, the transformation and savings began. In just one year, over 1.5 million pounds of sludge found a new life, eliminating $154,572 in hazardous waste planning fees while achieving a sustainable solution.

This P2 success story highlights the power of transforming waste into a valuable resource. TSMC Washington's ingenuity shines a light on the hidden potential within industrial waste streams across the state.



More Washington businesses embrace P2 solutions

Washington leads the way in pollution prevention with two 2023 Regional Pollution Prevention Award winners [9] in EPA Region 10. Several businesses across industries and regions are seizing P2 opportunities and redefining what it means to do business in a changing world.

9 www.epa.gov/p2/2023-regional-pollution-prevention-award-winners

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Tackling Toxics

Find more inspiring stories from 2023 in our Tackling Toxics blog:

- Ecology helps business save costs and reduce power use with air leak audit[10]
- Food processor saves production cost with Ecology pollution prevention grant[11]
- Washington aerospace business earns EPA Region 10 2023 P2 Recognition Award[12]

10 ecology.wa.gov/blog/august-2023/tackling-toxics-ecology-helps-business-save-costs-and-reduce-power-use-with-air-leak-audit
11 ecology.wa.gov/blog/september-2023/food-processor-saves-production-cost-with-ecology-pollution-prevention-grant
12 ecology.wa.gov/blog/october-2023/washington-aerospace-business-earns-epa-region-10-2023-pollution-prevention-recognition-award

QUESTIONS? CONTACT US!

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ecology.wa.gov/ToxicsReductionTeam

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