30 Years of Toxics Reduction

An audio retrospective from Ecology's Hazardous Waste and Toxics Reduction Program

The state of Washington's Department of Ecology was created in February 1970, the first environmental regulation agency in the country. In fact, it predates the federal Environmental Protection Agency by several months. The department administers laws and regulations pertaining to the areas of water quality, water rights and resources, shoreline management, toxics cleanup, nuclear and hazardous waste, and air quality.

As part of those efforts, the agency's Hazardous Waste and Toxics Reduction Program – sometimes called Haz-Waste or HWTR – has been working on pollution prevention for over 30 years, as of 2021. Dubbed "P2" by those involved, work was already underway at Ecology when the Washington State Legislature passed the Hazardous Waste Reduction Act in 1988. That launched statewide toxics reduction efforts, or TR, that continue to this day.

Though now retired, Peggy Morgan started her career at Ecology as an intern in 1985. By 1988, she joined the newly-formed Office of Waste Reduction…whose job it was to find ways to get businesses to cut back on waste. Sounds simple enough…but Peggy soon learned that those early days had a unique set of challenges.

PM01 - :15

"Back then, I'd say that there's a lot of…sort of tension between the business community and Ecology. And this was an effort to provide technical assistance to the business community in a non-threatening way."

Peggy says in the late 1980s and early 90s, Ecology was almost exclusively seen as the big, bad government agency come to suppress free enterprise and suffocate commerce. Within two years, another law passed that mandated certain businesses to create and maintain pollution prevention plans.

So, it was an almost revolutionary idea for Ecology staff to offer businesses technical assistance…an open hand, rather than a firm one. The Hazardous Waste Team pressed forward with creating helpful, assistive support for their customers. Suddenly, business groups that had once been suspicious of Ecology were recommending their peers take advantage of some of Ecology's technical assistance offerings.

Peggy was instrumental in getting something called "Long-Term Technical Assistance Plans" established within the agency.

PM02 - :32

"We took a look at all the different types of businesses that were required to develop plans, and really, for the first time, I think, thought about different business sectors in different ways. And we developed a questionnaire that each staff member would fill out, including things like, you know, how many businesses, what are the size of the businesses, what are the trade associations

that are out there, trade publications, waste reduction opportunities, and then kind of prioritized from there."

Reflecting back on those early milestones, Peggy feels that her efforts along with those of hundreds of others, has made a huge difference in protecting human health and the environment in Washington over the course of 30 years.

PM03 - :32

"The number of pounds of hazardous waste that's no longer generated, and the number of pounds of hazardous substances that are no longer used can now be quantified through those pollution prevention plans and implementation of those plans, and that's something that Ecology was not able to do prior to those plans. Also, just the effect of Ecology working directly with those businesses to develop those plans, I think, has really increased the amount of trust between the industries and Ecology."

And looking forward, Peggy says Ecology is already well on the road toward the future of toxics reduction in Washington by setting its sights on reducing or restricting the use of hazardous chemicals in products before they're manufactured…stemming the flow upstream, so to speak.

It's been the driving idea behind the efforts of Darin Rice, who has also been with Ecology over 30 years. Darin began his long career at Ecology as a summer intern in 1989, and was quickly hired on as an Environmental Planner the following year. He says once the Toxics Reduction effort began to pick up steam, it really began to take on a life of its own…and he's proud to have been a part of it almost from the very beginning.

DR01 – :09

"Well, over the years, I've have my hand in pretty much all aspects of the program's work, ranging from cleanup to compliance to toxics reduction."

Darin says the things he's been most proud of have been the innovations…the things that made a big difference and showed Washington as a national leader. In the early 1990s, that meant starting something that had never been done before at Ecology.

DR02 – :25

"The newsletter, Hazardous Waste ShopTalk, which was Ecology's first newsletter designed to help the regulated community stay in compliance with our dangerous waste regulations. And one way to do that is to not produce as much dangerous waste in the first place. So that newsletter really became a foundational piece for the program promoting both compliance and pollution prevention for almost three decades."

Darin says other successful efforts through the years – such as the Better Brakes program, which phases out the amount of copper in brake pads, and the Mercury Switch removal program, designed to pull concentrated mercury out of older vehicles before they reach the junkyard – are highlights because they originated in Washington and have since spread to other states across the country. And these are just a few of numerous initiatives that Darin can name as highlights of pollution prevention and toxics reduction over the past 30 years…like the sector campaigns he started in the 1990s.

DR05 - :16

"Well, I can only blame myself for this idea. There's thousands of small businesses out there, and while, you know, each of them have less waste that they could mismanage compared to a bigger business, collectively they still create a lot of waste and therefore are a risk that we needed to pay attention to."

Industry sector campaigns had catchy names, like "Shop Sweeps" for automotive businesses and "Snap Shots" for large scale printing operations. The goal was to visit every shop in the state of Washington – an ambitious, if not impossible goal – and begin reducing toxics through technical assistance…a more-carrot-than-stick approach.

And due to the limited resources available at the local level in cities and towns across Washington, these industry sector campaigns naturally evolved into today's Pollution Prevention Assistance program, in which local entities are given tools and training by Ecology's Hazardous Waste and Toxics Reduction experts in order to equip them with the necessary means to manage small-quantity waste generators at the local level.

DR06 – :20

"And that program, over the dozen or so years that it's been around, has provided over 40,000 site visits and resolved about the same number of small concerns. And the whole point is keeping small problems small and helping avoid more expensive and damaging waste mismanagement or toxic cleanup issues."

Around the turn of the century, Darin says the state's solid and hazardous waste plan – known as Beyond Waste – really focused on preventing pollution before it could contaminate the environment, which was a relatively new concept, even though today – terms like zero waste and zero emissions are fairly commonplace. Some skeptics even called the idea "Beyond Belief" rather than Beyond Waste…which Darin took as a career-guiding challenge.

He also oversaw the creation of something called the Technical Resources for Engineering Efficiency, also known as the TREE program…a bold effort to reach out to manufacturers who use hazardous chemicals.

DR03 - :17

"Basically, if a company can spend several days with us doing a deep engineering dive into their process, we can not only reduce their use of toxic chemicals, we can sometimes help them avoid the need for, say, a major environmental permit, and we can save them a lot of money."

And part of the effort to save businesses money falls to another longtime Ecology employee…Hugh O'Neill, who's currently the Toxics Reduction Team Lead at HWTR's southwest regional office. Hugh started at Ecology in August of 1991 as the TR Unit Supervisor. Trouble was, the TR Unit hadn't been fully put together yet, so Hugh immediately set about hiring a crew of specialists to support the Toxics Reduction effort.

Once businesses began submitting their pollution prevention plans shortly afterward, Hugh says it was immediately clear that they had their work cut out for them.

HO01 - :20

"Counting up all the hazardous substances that were being reduced and hazardous waste that were being reduced…I remember it was just a celebration that the businesses were voluntarily implementing these opportunities to reduce all this hazardous waste, and it was…it was adding up to millions and millions of pounds, and it was just a really exciting moment."

Around 2003, the federal Environmental Protection Agency issues a research paper that indicated lean manufacturing within businesses is becoming a preferable trend that comes with some inherent environmental benefits, but also some environmental blind spots. That led to the development of a project called Lean and Green, in which Ecology staff works directly with businesses to help them identify ways to not only improve their manufacturing processes but do so in an environmentally friendly way that ultimately results in a cost savings. Hugh says that adds up to a win for the businesses, a win for ecology and its partners, and a win for Washington.

HR02 - :22

"We're out here to help you understand the regulations, understand how to comply. But we're really out here to help you reduce pollution, reduce waste, be more efficient, improve your profits, reduce your costs, and help the workers at the company have a safer environment, help the communities around those factories have a healthier, safer environment for all of us in Washington state."

Some of the people responsible for creating a safer environment in Washington state are Ecology's toxics reduction engineers…a group of passionate individuals dedicated to seeing their mission accomplished in the best way possible. Myles Perkins is one of those folks, who works out of the Northwest Regional office. He spends his days out in the field working with businesses to try and eliminate sources of hazardous waste generation in their industrial processes.

One way to do that is to try and get as far up the processing chain as possible to stem the flow of toxics substances at their source…something called "Source Reduction," which really started taking off when Ecology began looking for safer chemical alternatives.

MP01 - :33

"So, a lot of businesses, they use chemicals because they do a great job of either cleaning parts or facilitating a process, so they work well but they typically, in some cases, produce hazardous waste that must be managed and dealt with. And it takes a lot of money and effort and time to deal with that stuff. Our goal with source reduction is to hopefully work with businesses and encourage them to use less toxic chemicals, have safer processes, so that when they're at, you know, the tail end of their production processes, they're not generating the bad stuff, they're not generating toxic waste."

And Myles was there when the program expanded its focus to waste reduction and toxics elimination in the past several years. Working closely with senior staff, the team began to focus on chemical hazard assessments and knowledge of safer alternatives. As they improved their processes, Myles says source reduction supported the use of hazard assessments to select safer chemical alternatives and safer processes that work about as well as their hazardous counterparts. And businesses, for the most part,

have been roundly supportive of this approach – a stark contrast to the early days of pollution prevention.

MP02 - :23

"We've had a lot of businesses that are very eager to reduce their footprint, to reduce their chemical use, and so those people are very receptive once we're able to work with them. Our whole goal of preventing pollution and reducing resource use is, in my head, very paramount to a healthy future, and so our goal, again, in the state of Washington is to really try to promote those practices."

Part of promoting the use of safer alternatives includes not only identifying better chemicals but encouraging their use. But what if alternatives don't even exist yet? That's where Haz-Waste's Safer Chemist Lead, Saskia Van Vergen, comes in. Having spent nearly ten years overseeing the agency's chemical improvement efforts, Saskia says it's an area that's about as complex as it is necessary to reduce the use of toxics in Washington.

SVB01 - :34

"When looking for safer alternatives, one really needs to understand what the chemical of concern is being used for. So, is it necessary in the product or the process where it's being used? If it is necessary, what is the function of the chemical or the product that it's in? And that helps us identify which alternatives are safer chemicals, for example, is something a carcinogen? Is it a mutagen or reproductive hazard? Is it harmful for the environment, such as is it toxic to aquatic species? And is it persistent or bioaccumulative?"

All that work is to ensure the potentially safer chemical isn't a regrettable substitution…something that turns out to be even worse that what it was intended to replace. But Saskia says sometimes…there just isn't a safer chemical available. And that's where Green Chemistry efforts come into play. If you have a situation where you've defined the characteristics of an alternative and it's performance needs, it can lead to innovations that adhere to Green Chemistry principles…something mostly unheard of back when Ecology's toxics reduction efforts first began. Enterprising scientists can actually create new chemicals that have less of an impact on the environment and human health while meeting the needs of an industry looking to reduce its toxic output.

SVB02 - :20

"If there is an application where an innovation is needed, rather than saying oh, there's no safer alternative, it actually empowers the chemists, and the material scientists, and engineers, where one can design solutions that can work in these spaces where chemicals of concern seem to at this point be the only chemical, or solvent, or product that can be used."

When it comes to toxics reduction, Saskia says we should always be in a continuous state of improvement…something Darin Rice has been working on for over three decades. Since joining Ecology as an intern in the late 1980s, Darin has worked his way up through the ranks at HWTR, becoming manager of the entire program not once…but twice, with a brief sabbatical in between. Under his leadership, the program has evolved its focus from preventing cleanups…to preventing hazardous chemical use in the first place.

DR07 - :20

"Cleanups are straightforward, right? The soil was dirty, and now it's clean. It's pretty simple, right? But showing the value of prevention has been a trickier thing. But I think that, over the years, we've gotten better at that. We are showing that prevention works, and that it costs way less than waste management and cleanup."

Over the years, Washington has enacted strong industrial regulations meant to ensure that what billows from a smokestack, oozes from a sewage discharge pipe, or slowly leaches from a stagnant 55-gallon drum doesn't harm human health or the environment. But even the strongest end-of-pipe regulations aren't going to solve the toxics challenges we face today. To do that, Darin says we've got to get toxic chemicals out of consumer products, because that's the biggest source of chemical impact to people and the environment today.

DR08 - :26

"It's coming from the small but steady releases of chemicals embedded in millions of everyday consumer products that find their way a little at a time into our food, dust, water, soil, bodies, our kids, salmon, orcas, and the environment in general. I mean, look around you. Think about the everyday consumer products in your home, office, garage, shed, driveway, or in your kids' school."

And Darin says it would be a nearly insurmountable task if it weren't for the valuable partnerships Ecology and the Hazardous Waste Program has forged throughout the years. Ecology's pollution prevention efforts have benefitted greatly through strategic alliances with other government agencies, local, state, and federal, as well as community groups, nonprofits and advocacy organizations.

DR09 - :44

"Department of Health, first and foremost, comes to mind. There's a big overlap in sort of a shared mission of protecting human health. I should also mention Toxic Free Future, formerly called the Toxics Coalition. In passing laws like the Children's Safe Products Act, Safer Products for Washington, we collaborated and shared perspectives and our combined efforts I think helped get those laws passed. And EPA has always, you know, been a very strong partner over the decades. There are some areas where they've really made a difference, I think, for us. One is their Safer Choice program that helps consumers and businesses and purchasers find products that perform and contain ingredients that are safer for human health and the environment."

After 32 years of service to the state…Darin is finally retiring, confident his efforts to make Washington safer for human health and the environment have been successful. He'll be passing along the torch to a new generation of scientists, advocates, and environmentalists who share his passion for the mission, and as he looks back on how far we've come…he also recognizes that more must be done.

DR04 – :39

"I guess at the thousand-foot level, our efforts to get at the source to meaningfully address toxics in products is working. We're making progress. There are fewer flame retardants being found in wildlife. We've reduced copper from brake pads going into the environment by over half. We've removed over a quarter-million mercury switches from automobiles before that mercury could

get into the environment, our new Product Replacement Program provides financial incentives to businesses to remove from communities, certain products and technologies containing our most problematic chemicals before they can pollute our water or cause soil contamination."

It's a goal shared by everyone at the Department of Ecology, that the Hazardous Waste and Toxics Reduction Program can continue its successful efforts to prevent pollution in Washington state for another 30 years…and long into the future.