



Current Hazardous Waste System Issues

Ecology's Hazardous Waste and Toxics Reduction (HWTR) Program activities are grouped into three subject areas: Pollution Prevention, Compliance with the Regulations, and Permitting and Corrective Action at facilities that manage hazardous wastes. The three subject areas and the issues that are unique to each are discussed in this paper.

The issues discussed in this paper are important to Beyond Waste and the State Hazardous Waste Management Plan for a number of reasons including:

1. A key strategy of the Beyond Waste approach relies on the development of partnerships between Ecology and the business community. Many of the recommendations included in this section for improvements to HWTR Program activities in pollution prevention, regulatory compliance, and permitting/corrective action rely on new or improved partnerships to work. For example, partnerships are vital to planning for and implementing pollution prevention (P2) on a facility-specific or an industry-wide basis. Improvements to those existing partnerships will result in a better P2 process which will benefit the Beyond Waste movement.
2. Reducing risk from toxic materials as well as wastes is an important goal of both Beyond Waste and P2 implementation. In the future, P2 plans should focus more on reducing the inherent hazard of material inputs into manufacturing processes.
3. Placing greater emphasis on regulating wastes based on toxicity and risk also encourages the use of non-toxic or less toxic substances in manufacturing processes.
4. To minimize risk to people and the environment, it is important to maintain a focus on compliance with the regulations while working toward the Beyond Waste goals and even after those goals are met.
5. Amending the state *Dangerous Waste Regulations* to encourage more recycling is a high priority for Beyond Waste and just one of the steps that Ecology can take to build on its partnerships with industry.
6. Inadequate financial capability to conduct the clean and safe operation and closure of hazardous waste management facilities has, in the past, resulted in major releases of toxic materials to the environment. The regulations need to be amended to prevent this from happening in the future.

Today's Reality, Goals, and Proposed Actions

This section will examine each of the three subject areas (Pollution Prevention, Compliance with the Regulations, and Permitting and Corrective Action) to describe what is happening today in each of these areas, the goals selected in each area to achieve the Beyond Waste vision, and the actions proposed in each area to achieve the goals.

1. Pollution Prevention (P2)

Since 1990, when Washington's Hazardous Waste Reduction Act (Chapter 70.95C RCW) was passed, businesses that generate 2,640 pounds or more of recurrent hazardous waste annually or report toxic releases as part of the federal Toxics Release Inventory requirement must prepare P2 plans and submit them to Ecology.

Today's Reality

From 1990 to 2000, P2 planners in Washington reported generating 48 million pounds less hazardous waste, which (adjusted for economic conditions including business levels) represents a 59% reduction from the 1992 generation level. 1992 is used as the baseline because it is the first year facilities were required to submit P2 plans.¹ While these reductions are not all directly attributable to P2 planning, many hazardous waste generators point to P2 planning and implementation of P2 opportunities as being instrumental in their efforts to reduce the use of hazardous substances and/or generation of hazardous waste. In 1995, 92% of the P2 planners participating in a survey indicated that they implemented one or more of the P2 opportunities identified in their P2 plans.²

Furthermore, since 1995, approximately 165 facilities have dropped below the P2 planning threshold (2,640 pounds) by conscientiously implementing opportunities described in their P2 plan submissions.³ In fact, of the those facilities exiting the P2 planning process, the most common reason reported for dropping below the reporting threshold is success in achieving pollution prevention goals.⁴ The data clearly indicate that P2 planning can encourage and better prepare facilities to identify and implement environmentally beneficial actions.

While P2 planning is required by law, implementation of opportunities identified by the facility that would reduce the use of hazardous substances or the generation of hazardous wastes is voluntary. The voluntary implementation of P2 opportunities has stabilized since the early years and has begun to show signs of declining. In addition, a facility may choose not to implement any P2 opportunities and report no progress in reducing hazardous waste generation or hazardous substance use, and this will still meet the requirements of the law.

Numerous companies have embraced P2 and, as noted above, steady progress has been made since 1990 in reducing hazardous waste generation. However, many companies still rely on hazardous substances in their manufacturing processes. As a result, the products produced using hazardous substances are destined to be future hazardous wastes when they are eventually discarded. Yet P2 plans often put little emphasis into reduction of the use of hazardous substances.

¹ Washington State Department of Ecology, Reducing Toxics in Washington: 2000 Annual Progress Report, Publication #02-04-034, November 2002.

² Ross & Associates Environmental Consulting, Ltd., *P2 Planning Effectiveness Study*, 1995.

³ Washington State Department of Ecology, *Moving Beyond Toxics: Planning for the Future of Hazardous Waste: A Report to the Legislature*, Publication #02-04-026, September 2002.

⁴ Washington State Department of Ecology, *Pollution Prevention Planning Issue Paper Self Assessment*, November 4, 2002 draft.

As noted above, the requirements for P2 planning are triggered by generating a large volume of hazardous waste or reporting the release of certain toxics to the environment. Since some common use chemicals, like acetone, are not on the Toxics Release Inventory list, facilities are not obligated to report them or examine them for reduction in their P2 plans. As a result, opportunities for Ecology to influence the decisions a business makes that impact the use of toxic substances and the generation of hazardous waste are limited. Decisions regarding the design of the facility itself, the manufacturing/industrial processes, or the products are all made long before P2 planning requirements or Ecology enters the picture.

P2 plans often address only the easy waste streams rather than those that are the most toxic.

The single media approach of focusing on the reduction of land disposed hazardous wastes generated by a facility often ignores the facility's impacts on other media (air and water) and may result in shifting a waste issue from one media to another.

Ecology staff who work with facilities to prepare P2 plans are often forced to spend a great deal of time simply working with facilities to produce a plan that is adequate and meets the requirements of the law rather than working to produce a meaningful plan.

Goals: What Washington will look like in 30 years

The future of Pollution Prevention planning should be directed toward the following goals to maximize effectiveness and achieve the Beyond Waste vision:

■ **Plan Earlier**

Plan for pollution prevention earlier by encouraging businesses to incorporate P2 considerations into the design of their facilities, processes, or products.

■ **Plan Better**

Plan better for pollution prevention by developing tools that help refine P2 planners' understanding of the costs and inherent hazards posed by specific material flows.

■ **More Implementation**

Implement more pollution prevention activities through the introduction of different incentives or means to encourage greater implementation of P2 plan activities.

■ **Better Access**

Ecology provides better access to P2 planning program tools by enhancing the accessibility of the Ecology Web site.

Proposed Actions

These recommendations to be undertaken over the next five years describe a number of activities that will help to achieve the P2 planning goals listed above.

Summary List of Recommendations

Recommendation HW1	Encourage P2 planners to address hazardous substance use including toxicity and risk in their P2 plans
Recommendation HW2	Develop an EMS hybrid model and guidance
Recommendation HW3	Improve P2 plan quality and relationships with P2 planners

Priority Recommendations

Recommendation HW1 – Encourage P2 planners to address hazardous substance use including toxicity and risk in their P2 plans

Statement of action

Develop additional incentives to encourage P2 planners to address and implement hazardous substance use reduction. This may involve:

- ✓ Education
- ✓ Technical assistance
- ✓ Modifying P2 fees
- ✓ Low-interest loans
- ✓ Possible rule and statute changes in the future

Ways to encourage addressing toxicity and risk in their plans include:

- ✓ Screening and evaluation tools, such as accounting for complete costs
- ✓ Mass balance
- ✓ More and better information on the Web
- ✓ Additional training of staff, P2 planners and other interested parties
- ✓ Working with EPA and others to prioritize chemicals of concern and to examine new risks

Background/Rationale

If we are going to get to Beyond Waste, hazardous substance use reduction must be addressed since most future wastes are simply toxic substances incorporated into products (i.e., 95% of the toxics used go into products and almost all products currently end up as waste). If the inputs are not addressed, we will continue to be producing hazardous waste long into the future. It is critical that the P2 plans recognize and address this. This recommendation is consistent with the emphasis on toxicity and risk in the Beyond Waste plan. It just makes sense. If toxicity and risk are addressed, then the most toxic and/or risky materials can be addressed first, regardless of whether the material is a waste or a hazardous substance.

Recommendation HW2 – Develop an EMS hybrid model and guidance

Statement of Action

As an alternative to standard P2 plans, Ecology should develop an Environmental Management System (EMS)/Sustainability hybrid model and guidance based on lean manufacturing and sustainability principles. This hybrid model would be a plan that fulfills the P2 plan requirement through a multi-media and sustainability approach, while emphasizing lean manufacturing and economic vitality. This alternative may become the standard format for large quantity generators over time.

Background/Rationale

Ecology has been encouraging facilities to incorporate P2 plan requirements into EMSs because the resulting P2 opportunities are more closely integrated into a facility's operations and thus are more likely to be implemented. The idea behind this sustainability hybrid is to make sure that if an EMS is done, it emphasizes a multi-media approach and sustainability. A lean manufacturing emphasis makes sense since lean manufacturing emphasizes systemic elimination of waste from all aspects of an organization's operations. (See glossary for complete definitions of EMS and lean manufacturing.)

Recommendation HW3 – Improve P2 plan quality and relationships with P2 planners

Statement of Action

Continue to work to improve P2 plan quality and relationships with P2 planners. Some possible methods to do this are through additional web information, additional training, and finding ways to address concerns that were raised by P2 planners at hazardous waste focus group meetings held in 2003. Some of these concerns include: the hazardous substance data requirements, and the need for an easier way to opt out of the required updates if P2 opportunities are not available.

Background/Rationale

The State Plan emphasizes partnerships as an important implementation tool. This is also critical with the P2 planners. Implementation of P2 plans is currently voluntary. Good relationships between Ecology staff and the P2 planners may encourage P2 plan implementation and certainly may encourage better quality P2 plans.

2. Compliance with the *Dangerous Waste Regulations*

Compliance with federal and state hazardous waste management regulations is the basis of Ecology's charge regarding hazardous waste management. From its inception, safe waste management has been the foundation of the Hazardous Waste & Toxics Reduction Program. The state *Dangerous Waste Regulations* (Chapter 173-303 WAC) are the basis of the HWTR Program's compliance efforts. Formal inspections of and informal visits to waste generators are centered on the regulations. The same is true of other major compliance activities including the permitting of hazardous waste management facilities and workshops conducted on proper hazardous waste management.

Today's Reality

From 1991 and 2000 the number of compliance inspections went up 334 percent and the number of environmental threats resolved increased 243 percent.⁵ This increase in the number of inspections conducted by HWTR Program staff is the result of two primary changes within the program. First, improvements were made to increase the efficiency of inspections and to focus on violations that presented potential environmental or human health threats. This allowed more time to be spent conducting inspections rather than doing associated paperwork.

Secondly, the HWTR Program began conducting statewide single-industry campaigns that focused outreach efforts of the staff on one industry at a time such as the automobile service industry. These single-industry campaigns resulted in efforts by HWTR Program staff to carry a combined message of compliance and pollution prevention to regulated businesses. The results were positive. The two biggest single-industry campaigns resulted in 80-90 percent of the shops that were visited implementing at least one of Ecology's recommendations for improved management or reduction of hazardous wastes.

The existing program focuses on preventing and managing wastes. The same precautions and safeguards are not in place for substances and products. It does not make sense to carefully regulate wastes from cradle to grave, but have no similar management requirements for hazardous substances and products.

From a generator's perspective, Washington has some of the most stringent environmental and worker safety regulations in the country. As a result, businesses in Washington fear having government personnel visit their sites. In addition, some have voiced concern that Ecology inspectors can be inflexible and lack business experience or training. Businesses also wish to see more consistency between Ecology's compliance staff and technical assistance staff, as well as greater consistency between Ecology and EPA.

Goals: What Washington will look like in 30 years

The future of regulatory compliance activities for the HWTR Program is directed toward the following goals to maximize effectiveness and achieve the Beyond Waste vision:

■ Build on Existing Relationships

Ecology continues to build on existing relationships with hazardous waste generators to improve compliance with the *Dangerous Waste Regulations*.

■ Improve Information Availability

Ecology makes information more available to generators through various avenues including person-to-person contact and internet-accessible data and guidance.

■ Promote Recycling

The *Dangerous Waste Regulations* are modified to promote safe recycling and emphasize the Beyond Waste goals.

⁵ Washington State Department of Ecology, *Compliance and Enforcement Summary Report*, Publication #01-04-020, June 2001.

Proposed Actions

These recommendations, to be undertaken over the next five years, describe a number of activities that will help to achieve the regulatory compliance goals listed above.

Summary List of Recommendations

Recommendation HW4	Strive for better relationships with the regulated community
Recommendation HW5	Work to ensure greater compliance with the regulations
Recommendation HW6	Modify the <i>Dangerous Waste Regulations</i> to encourage more waste and toxics minimization, including upcycling

Priority Recommendations

Recommendation HW4 – Strive for better relationships with the regulated community

Statement of Action

Strive for better relationships with the regulated community by having HWTR inspectors:

- ✓ Obtain more business experience and training.
- ✓ Increase consistency with other Ecology inspectors and technical assistance staff, other state agencies, and EPA.
- ✓ Follow the HWTR Inspector’s Manual Guidance and HWTR Program parameters to improve consistency.
- ✓ Conduct more cross-media inspections.
- ✓ Maintain the strongest focus on requirements that directly affect environmental protection.
- ✓ Align field work to complement industry sector approach.

Background/Rationale

Ecology staff and management have heard complaints about some HWTR inspectors’ relationships with the regulated community. It is always challenging to form a good working relationship when one party has a regulatory oversight role and the other party is on the receiving end of that oversight. The above recommendations would help all inspectors to have a better relationship with the regulated community and hopefully lessen any complaints about conflicting regulations, minor rules violations, and differing interpretations of regulations from different inspectors.

Recommendation HW5 – Work to ensure greater compliance with the regulations

Statement of Action

To ensure greater compliance with the regulations the following actions should occur:

- ✓ Continue to inspect all generators with an EPA ID number at least once every 5 years, and more often if needed for certain facilities such as large quantity generators and waste handlers that receive wastes from off-site.
- ✓ Ecology should provide additional workshops and other training for businesses.
- ✓ Ecology should make more compliance information available on the web.

Background/Rationale

It has been shown that regular inspections, at least once every five years, ensures greater compliance with the regulations. It also has been shown that at least some of the facilities that don't comply do so because they don't understand the regulations. Specific workshops (these may be tied in with sector campaigns and also address pollution prevention strategies) and additional compliance information on the web would help address this problem.

Recommendation HW6 – Modify the *Dangerous Waste Regulations* to encourage more waste and toxics minimization including upcycling

Statement of Action

The *Dangerous Waste Regulations* should be modified to encourage more waste and toxic substances minimization, including additional legitimate recycling, especially “upcycling” (or recycling that will result in better, more valuable uses of resources—for example, re-refining oil instead of burning it for energy recovery).

Background/Rationale

It has been a difficult balance within the *Dangerous Waste Regulations* to encourage recycling, yet still protect the environment. In the past, some recycling has been very close to simply applying wastes to the land. The regulations should be reviewed by a work group and modified, if necessary, to encourage upcycling and discourage land disposal when appropriate.

3. Permitting/Corrective Action

Ecology issues waste management permits to facilities that treat, store, or dispose (TSD) of hazardous waste. In addition to the conditions of the permit, a hazardous waste management or TSD facility is also subject to state and federal regulations for the activities conducted during operation and when the facility ceases operation or closes. Unintended releases from TSD facilities during operation are cleaned up under a process called “corrective action.” The cleanup of these unintended releases (leaks, spills or releases due to mismanagement) is governed by the conditions of the facility permit and Washington’s Model Toxics Control Act (MTCA) Chapter 173-340 WAC. Due to the complexity of most hazardous waste site cleanups, the corrective action process is often very involved and usually expensive.

Today's Reality

Through permits, technical assistance and monitoring of compliance with the regulations at active waste management facilities the goal of preventing releases of dangerous waste to the air, soil, and groundwater is being met. Also, of the 116 corrective action sites in the state, only 33 are medium or high priority sites. Ecology expects to complete the corrective action process at all 19 of the high priority sites by 2011 and the 14 medium priority sites by 2032.

Hazardous waste permits do not always cover all types of wastes received or waste handling processes employed at a facility. Also, hazardous waste permits contain financial requirements for TSD facilities including coverage for pollution liability and facility closure. However, the financial requirements often fall short of paying the full cost of closure. Further complicating matters, the financial mechanisms often used by TSDs require the owner/operator to be present at closure (which is not always the case) and these mechanisms can be so complex that it is difficult to successfully file and collect claims.

An additional concern is the limited ability of the regulatory system to address potential environmental threats at recycling facilities and used oil processors because these facilities are not required to obtain a hazardous waste management permit.

Liability coverage is not currently required for corrective action, and financial assurance for a cleanup is not required until the corrective action assessment and investigation process is well under way. Corrective action costs can only be calculated after studies have been conducted to investigate the extent of contamination and a remedial action method has been chosen. This is often a lengthy process and facility owners sometimes go out of business leaving the public holding the bag for cleanup costs.

A reliable and dedicated funding source does not exist to adequately support the staff levels needed for permitting and corrective action.

Goals: What Washington will look like in 30 years

The future of permitting and corrective action activities for the HWTR Program is directed toward the following goals to maximize effectiveness and achieve the Beyond Waste vision:

■ **Ensure Full Financial Responsibility**

Ensure that hazardous waste management and recycling facilities assume full financial responsibility for facility closures and corrective action cleanups.

■ **Acquire More Technical Assistance**

Ecology should seek technical assistance from EPA on financial assurance, including cost modeling.

■ **Educate the Public**

The public should be aware of the possible risks and costs of waste mismanagement at facilities handling hazardous wastes.

■ **Transform Existing TSDs**

As the goals of Beyond Waste are met and the need for waste management facilities diminishes, TSDs are provided with technical assistance to allow them to mature into

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“second generation” TSDs. Second generation TSDs provide treatment (reclamation, reuse, or recovery for beneficial value) of wastes that have not been eliminated, or stocking and distribution of reusable materials for industrial and commercial uses.

Proposed Actions

These recommendations, to be undertaken over the next five years, describe a number of activities that will help to achieve the permitting and corrective action goals listed above.

Summary List of Recommendations

Recommendation HW7	Ensure hazardous waste management facilities are operated in a safe manner
Recommendation HW8	Develop accurate cost estimates for closure/corrective action
Recommendation HW9	Reduce the administrative burden for corrective action facilities
Recommendation HW10	Explore private/public partnerships

Priority Recommendations

Recommendation HW7 – Ensure hazardous waste management facilities are operated in a safe manner

Statement of Action

Ecology should continue to work on its assessment of hazardous waste facilities to ensure:

- ✓ Waste handlers (TSDs, recyclers and used oil processors) assume full responsibility, including financial responsibility, for any necessary environmental remediation at their facilities.
- ✓ Waste handlers are regulated consistently and comprehensively.
- ✓ Ecology has the necessary funding mechanisms to implement an adequate technical assistance, permitting and compliance program for waste-handling facilities.
- ✓ The public understands the full costs (closure, investigation, cleanup, post-closure, and long-term monitoring) and risks of possible mismanagement of waste at waste-handling facilities.
- ✓ Establishment of an operating certificate program for recyclers and used oil processors, followed by increased Ecology presence at these facilities through visits by technical assistance and compliance staff.

Background/Rationale

In the past, there has been a problem with TSDs going bankrupt and not having enough money in their closure accounts to fund proper closure. In addition, Ecology has had the

authority to regulate only portions of some of these major TSDs. Local governments are responsible for regulating some activities. This has resulted in the mismanagement of wastes and environmental problems at some facilities. Ecology's assessment of the problems and options for hazardous waste facilities has been working to identify and solve these problems.⁶

Recommendation HW8 – Develop accurate cost estimates for closure/corrective action

Statement of Action

Work to develop complete and accurate cost estimates and financial assurance for closure and corrective actions by waste handlers. Explore various ways to do this, such as: assistance from EPA or other state agencies, additional HWTR Program staff time assigned to this or contracting for services.

Background/Rationale

There is a lack of complete and accurate cost estimates for many of these facilities' closure accounts. Ecology staff has not had adequate time to address this problem. If there were better cost estimates and facilities funded closure accounts adequately, it would ensure that if a facility went bankrupt there would be funds to cover closure and post-closure activities.

Recommendation HW9 – Reduce the administrative burden for corrective action facilities

Statement of Action

Work to reduce the administrative burden for facilities subject to corrective action by:

- ✓ Encouraging voluntary cleanups.
- ✓ Increasing regulatory flexibility including use of orders instead of permits.
- ✓ Continuing to work with facilities toward cleanups that are protective and reasonable for the location instead of relying on the most stringent requirements.

Background/Rationale

Facility owners and/or operators have complained about the administrative burden of the corrective action process. In addition, corrective action is very time-consuming for Ecology staff. The adoption of the above recommendations should result in the goal of having the same level of cleanup and environmental protection with a reduced expenditure of resources for facilities and for Ecology. With voluntary cleanups, less oversight would be required by Ecology. In addition, orders and more flexible clean-up standards would result in cleanups starting and finishing sooner.

⁶ Washington State Department of Ecology, *Hazardous Waste Management Facilities in Washington State – Problems & Options*, Publication #02-04-028, September 2002.

Recommendation HW10 – Explore private/public partnerships

Statement of Action

Explore the desirability of private/public partnerships for waste handling facilities.

Background/Rationale

It may make the most sense to have the public sector help run waste handling facilities to ensure proper management of hazardous waste, especially since it seems difficult for private facilities to financially succeed at such activities. This should be researched further.

Implementation Plan for the Current Hazardous Waste Issues

The following table shows when the recommendations from this initiative will be undertaken. This table is an excerpt from the Beyond Waste Implementation Plan, which can be accessed at <http://www.ecy.wa.gov/biblio/0407034.html>

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Current Hazardous Waste System Issues

Recommendations to Begin in First Year	Approach for Implementation	Recommendations for Years 2-5
<p>HW1 Encourage P2 planners to address hazardous substance use including toxicity and risk in their P2 plans</p> <ul style="list-style-type: none"> Develop incentives, technical assistance, new tools. 	<p>Ecology will lead this effort.</p>	<p>HW1. (Remainder) Education on P2 Planning</p>
<p>HW3 Improve P2 plan quality and relationships with P2 planners (web-based P2 planning format).</p>	<p>Ecology will lead this effort with other entities.</p>	<p>HW2 Develop an EMS hybrid model and guidance</p>
<p>HW4 Strive for better relationships with the regulated community</p> <ul style="list-style-type: none"> HWTR inspectors more training, consistency, business experience, follow inspectors manual. 	<p>Ecology will lead this effort with other entities.</p>	<p>HW5. (Remainder) Inspections, additional training for businesses</p>
<p>HW5 Work to ensure greater compliance with the regulations</p> <ul style="list-style-type: none"> More compliance information on the Web. 	<p>Ecology will lead regulatory review efforts in cooperation with local government and others.</p>	<p>HW6 Modify the <i>Dangerous Waste Regulations</i> to encourage more waste and toxics minimization including upcycling</p>
<p>HW7 Ensure hazardous waste management facilities are operated in a safe manner (rule development for TSD initiative)</p>	<p>Ecology will lead this effort.</p>	<p>HW7. (Remainder) Consistent regulation; increased public understanding; operator certification</p>
<p>HW9 Reduce the administrative burden for corrective action facilities</p> <ul style="list-style-type: none"> Encourage voluntary cleanup, use of orders instead of permits, reasonable and protective cleanups. 	<p>Ecology will lead this effort.</p>	<p>HW8 Develop accurate cost estimates for closure/corrective action</p> <p>HW10 Explore private/public partnerships for waste handling facilities</p>

If you need this information in an alternate format, please call the Solid Waste and Financial Assistance Program at 360-407-6900. If you are a person with a speech or hearing impairment, call 711, or 800-833-6388 for TTY.