



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

# **Toxics Reduction Advisory Committee**

## **Findings and Recommendations**

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# Toxics Reduction Advisory Committee

## Findings and Recommendations

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# Executive Summary

In March 2008, the Washington State Legislature directed the Department of Ecology (Ecology) to convene a stakeholder advisory committee to develop recommendations on four tasks related to pollution prevention (P2) plans and fees, and toxics use reduction. While Ecology convened this committee and was a member, the recommendations reflect the views of the committee as a whole.

The committee agreed to these recommendations based on a “modified consensus” decision-making process. That is, while still striving for consensus, recommendations could be approved by a “yes” vote of a large majority of the committee members. Dissenting members’ views are presented in the discussion summaries, which follow each task in the main report. Committee members were given the opportunity to submit minority reports if they disagreed strongly with any of the recommendations presented. None of the committee members chose to submit a minority report.

## **Task 1: Help businesses achieve a 50 percent toxics use reduction goal.**

Recommendations:

- 1-1. Increase research and development abilities by:
  - Participating in the formation and activities of an Interstate Chemicals Clearinghouse (IC2), a multi-state repository of research and data about toxic chemicals.
  - Forming partnerships with higher education to conduct research into hazardous substances and their alternatives.
  - Forming partnerships with trade associations to solve specific industrial problems related to finding safer chemical alternatives to hazardous substances.
- 1-2. Amend the definition of “hazardous substance” found in RCW 70.95C and Chapter 173-307 WAC.
- 1-3. Add a definition of “high priority hazardous substances” to RCW 70.95C and Chapter 173-307 WAC.
- 1-4. Periodically conduct a science-based public process to develop recommendations on amendments to lists of substances, technical assistance priorities, and criteria for measuring success.

- 1-5. Add a requirement to RCW 70.95C and Chapter 173-307 WAC that pollution prevention planners must include information on the “high priority hazardous substances” in the inventory and opportunity assessment portions of their P2 plans.
- 1-6. Identify which products include high priority hazardous substances to assist businesses in identifying where these substances are.
- 1-7. Increase awareness of existing tax incentives, which can lead to the reduction goal.
- 1-8. Continue to pursue coordination with other agencies, which can lead to the reduction goal.
- 1-9. Implement a statewide incentive-based certification/recognition program based on the regional EnviroStars program.

## **Task 2: Improve the effectiveness and delivery of technical assistance in pollution prevention planning.**

### Recommendations:

- 2-1. Pollution prevention planners should report on hazardous substances using a common set of elements.
- 2-2. Establish a program designed to identify smaller firms that use products containing high priority hazardous substances. Provide information and assistance to help them switch to less hazardous products, and develop survey mechanisms to measure results.
- 2-3. Ecology should provide safer chemical alternative technical assistance to businesses and government who request help to reduce threats from hazardous substances.
- 2-4. Increase the resources and partnerships devoted to Lean & Green and Technical Resources for Engineering Efficiency (TREE) projects.

## **Task 3: Encourage moving away from "end-of-pipe" pollution reduction approaches to increase hazardous waste prevention throughout the state.**

### Recommendations:

- 3-1. Allow advanced environmental management and reporting systems as alternatives to P2 plans as required under Chapter 173-307 WAC.



- 3-2. Increase funds in an existing revolving fund and establish a voucher program to finance the changes needed to move from “end-of-pipe” solutions to manufacturing challenges related to toxic threats.

**Task 4: Revise the hazardous waste planning fee under RCW 70.95E.030, including opportunities to provide incentives that reward businesses for toxics use reduction successes in meeting a 50 percent toxics use reduction goal.**

Recommendations:

- 4-1. The committee does not recommend raising more revenue from the hazardous waste planning fee at this time, but new funds, when available, should be dedicated to the highest priority committee recommendations. These are:
- Recommendation 1-1: Research hazardous substance alternatives in partnership with higher education institutions.
  - Recommendation 1-1: Participate in an Interstate Chemicals Clearinghouse.
  - Recommendation 1-9: Develop a statewide incentive-based certification/recognition program.
- 4-2. Revise the hazardous waste planning fee to make the fees more proportional to the toxicity and threat posed by the waste and emissions discharged by a facility.
- Amend the fee formula in 173-305-220 WAC to add the following “risk pound” multipliers:
    - Ten (10x) for high priority hazardous substances in hazardous waste.
    - One hundred (100x) for high priority hazardous substances released to air and water.
  - Clearly communicate to facilities subject to this fee how their fees are calculated and how the fees reflect the toxic threat associated with their waste and/or emissions.
  - Pilot an alternative fee program using advanced toxicity analysis methods, taking into account “risk weighing methods” and a comprehensive set of toxic effects. Participation in this program would be optional and participating facilities would be involved in the pilot design. The approach would be different from the multipliers specified above and the fee formula found in 173-305-220 WAC.
- 4-3. Redistribute the hazardous waste planning fee among the fee payers to make it more proportional to the amount of their waste and emissions.
- Increase the maximum percentage of the total fees collected that are paid by any one fee payer (“the cap”).

- Base all Toxic Release Inventory (TRI) reporters' fees on the amount of emissions to the environment, without regard of the amount of hazardous waste generated.
- The lowest fee paid should be the lowest amount that covers the incremental cost of collecting it, with the minimum fee set no lower than the fee for 2,640 pounds of waste and emissions.

4-4. Offer a discounted fee for electronic reporting.

# Introduction

In March 2008, the Washington State Legislature included a "proviso" in its supplemental budget calling for the Department of Ecology (Ecology) to create a stakeholder advisory committee to conduct the following tasks:

1. Review and develop recommendations to help businesses achieve a 50 percent toxics use reduction goal.
2. Review and make recommendations to improve the effectiveness and delivery of technical assistance in pollution prevention planning.
3. Develop recommendations for strategies to encourage moving away from "end-of-pipe" pollution reduction approaches to increase hazardous waste prevention throughout the state.
4. Review and make recommendations on revising the hazardous waste planning fee under RCW 70.95E.030, including opportunities to provide incentives that reward businesses for toxics use reduction successes in meeting a 50 percent toxics use reduction goal.

The purpose of this document is to convey the findings and recommendations of the stakeholder advisory committee to the fiscal and policy committees of the Senate and House of Representatives as called for in the budget proviso. The recommendations require a mix of actions, from legislative changes, to rule making, to agency priority setting.

**Note:** The term "hazardous substance" is used in this document as a synonym for "toxic chemical," to better agree with existing regulatory definitions.

## Process

In May 2008, Ecology hired the Cascadia Consulting Group (Cascadia) to assist with the creation and facilitation of the stakeholder advisory committee. Together, Ecology and Cascadia identified groups of key stakeholders –business, non-profit environmental and research organizations, state and local governments, academia and labor. Individuals from these groups were invited to become members of the committee. (See Appendix 1 for list of committee members.)

The committee, which became known as the Toxics Reduction Advisory Committee (TRAC), met four times in 2008; June 23rd, August 5th, September 10th and October 14th. Meeting agendas and summaries are available at [www.ecy.wa.gov/programs/hwtr/TRAC/index.html](http://www.ecy.wa.gov/programs/hwtr/TRAC/index.html).

The recommendations in this report are the product of a “modified consensus” decision-making process. That is, while still striving for consensus, recommendations could be approved by a “yes” vote of a large majority of the committee members. Dissenting members’ views are presented in the discussion summaries, which follow each task in the main report. Committee members were given the opportunity to submit minority reports if they disagreed strongly with any of the recommendations presented. None of the committee members chose to submit a minority report.

Ecology convened this committee and was a member, but the recommendations reflect the views of the whole committee.

## Background

Almost 20 years ago, the state legislature established a pollution prevention (P2) program to eliminate or reduce hazardous waste and hazardous substances at the source. During this time, Washington State recognized that “pollution prevention pays.” Businesses that implemented P2 plans reported a reduction in hazardous waste generation and hazardous substance use of 200 million pounds. Financial savings for these reductions are estimated at over \$400 million. This is about 11 times more than the total revenue generated from the P2 planning fee during the same period.

According to the National Pollution Prevention Roundtable, for every dollar businesses invested in P2, most observe a \$6 return through cost savings and efficiencies.

Overall, the state has benefited from the pollution prevention program which has conducted more than 4,500 site visits and 260 workshops for 13,000 people from 1992-2006.

**Table 1. Washington State Pollution Prevention Results: 1992 – 2006**

Reductions	Amount	Financial Savings Estimated
Hazardous waste	204,000,000 pounds	\$408,000,000
Hazardous substances	200,000 pounds	
Solid Waste	105,000,000 pounds	\$1,000,000
Energy conservation	60,000,000 kilowatt hours	\$9,900,000
Water conservation	3,700,000 gallons	\$6,700,000
Air pollution	55,000,000 pounds	
Total		\$425,600,000

Source: “P2 Results Data System,” [www.pprc.org/measure/index.cfm](http://www.pprc.org/measure/index.cfm)

## **Pollution Prevention Planning Program**

Chapter 70.95C RCW establishes state policies and goals to encourage the reduction of hazardous substance use and generation of hazardous waste. The law achieves its goals by requiring certain hazardous waste generators and hazardous substance users to prepare P2 plans for voluntarily reducing hazardous substance use and hazardous waste generation.

*Pollution prevention means reducing or eliminating the use and toxicity of hazardous substances and hazardous wastes at the source, before they are generated. Pollution is the contamination of air, soil, or water by the discharge of harmful substances. Prevention is source reduction through toxic chemical substitution, process improvements and other practices that reduce or eliminate the creation of pollutants through increased efficiency in the use of raw materials, energy, water, or other resources.*

Facilities that generate more than 2,640 pounds of recurrent hazardous waste per year, or are required to report under the federal Toxic Release Inventory (TRI) are required to prepare P2 plan documents.

Currently, over 600 facilities are classified as pollution prevention planners in Washington. These facilities are required to develop P2 plans, report their progress every year, and update their plans every five years. Implementation of the P2 plan is strongly supported and encouraged but not required. The plan itself may remain at the facility, but an executive summary of the plan, annual progress reports, and plan updates must be submitted to Ecology.

## **Hazardous Waste Planning Fee**

Chapter 70.95E RCW requires most P2 planning facilities to pay an annual fee to fund technical and compliance education assistance for hazardous substance users and waste generators. The hazardous waste planning fee is based on the amount of dangerous and extremely hazardous wastes generated, and the amount of certain TRI emissions per facility.

## **Beyond Waste**

Beyond Waste is the state solid and hazardous waste plan for Washington. It is an update of the original plan as required by state law. It was issued in 2004 by Ecology's Solid Waste & Hazardous Waste programs. One key part is the "Industry Initiative," which identified opportunities to foster business competitiveness and protect human health and the environment. The initiative is intended to significantly reduce wastes and hazardous substances from Washington industries and over time, increase competitiveness with out-of-state businesses, and strengthen the state economy.

# Key Findings

The advisory committee deliberated thoughtfully, and at times vigorously, on issues associated with:

- The use of toxic substances in Washington, the nature of the risks posed by this use, and whether and how to reduce use.
- How the government can best address the threats associated with toxics.
- What changes to the planning fee might be implemented to encourage toxics reduction while treating all generators equitably.

The committee's goals were to develop recommendations that:

- Help businesses address the most significant toxic chemical threats.
- Enhance technical assistance efforts and the incentives provided to businesses to encourage a reduction in toxics use and associated waste, as well as the development and use of safer chemical alternatives.
- Improve the P2 planning fee structure, especially addressing equity and toxicity issues.
- Recognize and address the unique needs and limitations of smaller businesses.

The outcomes of these deliberations are presented in the recommendations section of this document. Some important areas of consensus as well as divergence in the viewpoints of the committee members are highlighted below:

The TRAC recognized the value of pollution prevention and the resulting economic, social, and environmental benefits. Table 1 on page 2 of this document presents some of the direct financial returns associated with pollution prevention.

The committee agreed that the 50 percent toxics use reduction goal referenced in the budget proviso would, for the purposes of the committee's work, be considered an aspirational goal. They further agreed that the job of the committee was not to provide recommendations as to how exactly to reduce use by 50 percent but rather how, over the medium to long term, toxic substances use could be substantially and, potentially even dramatically, decreased.

There was general agreement among members that persistent, bioaccumulative, and toxic (PBT) chemicals, heavy metals, and other chemicals found in products can and do have adverse effects on human health and the environment. The committee recognized that toxic chemicals end up in our soil, storm water, streams, lakes, rivers, oceans, and the bodies of all humans and wildlife of the state; with children at a higher risk of harm from exposure to toxic chemicals than adults.

Furthermore, members concurred that it is often hard to directly correlate cause and effect from exposure to hazardous chemicals.

However, there was not full agreement on the extent of these impacts or on the net cost and benefits of having toxic substances in products in the first place. Some members articulated the benefits associated with toxics in a wide range of products while others argued strongly for the need to eliminate the use of toxic substances to the greatest extent possible and as soon as possible.

All members acknowledged the importance of focusing public and private sector resources and actions on reducing the threats posed by toxics from procurement, to production, to storage, to use, and ultimately — disposal. The consensus of the group on this point can best be summed up by the statements made at several of the meetings to “go where the threat is, regardless” and to make sure Washington reduces threats from “the worst of the worst.”

However, while agreeing on the importance of addressing threats, members disagreed on where to put the emphasis of any new public policy and private initiatives to reduce those threats. For some, the best way to reduce and eventually eliminate threats is to stop using a substance in the first place. These members strongly supported incentives, research, and regulatory initiatives to decrease the use of toxics.

Other members argued strongly that use was not necessarily inherently dangerous and that it would be more productive to address waste in certain cases, storage and handling in others, and use in still others.

Regardless of their perspectives on this issue, the committee realized and discussed the many challenges associated with addressing toxics use. For example, there is no comprehensive reporting on the use of toxics by either current P2 planners or smaller entities throughout the state. There are thousands of substances and products containing these substances entering the state and found in the supply chain of the state’s manufacturers. This makes it difficult to fully understand the problem without further study.

Also, in many instances there are limited substitutes commercially available at this time. For that reason, some members strongly supported recommendations that would encourage research and development at the state level on “green chemistry” solutions as well as incentives to industry to find their own safer alternatives and solutions.

Some members argued that we do not fully understand the nature of many toxic threats and that there are significant unintended consequences associated with toxic substances.

These members support the use of the “precautionary principle” as the basis for decision-making. This principle can be defined as “When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.” (Wingspread Statement, 1998). The precautionary principle implies that society needs to take action to promote or protect public health even when there are uncertainties.

Other members disagreed strongly with this and do not consider the precautionary principle a good basis for public policy or decision-making.

The committee also recognized the large differences between the resources, expertise, and operations of small firms as compared to larger firms. Most members agreed that the approach to reduce toxic use in larger firms was much different than for smaller firms and that it was critical for the Legislature and Ecology to recognize those differences and develop programs especially to accommodate the unique challenges for small businesses.

Despite disagreements, committee members worked together effectively and productively to make recommendations that could work for all parties, with a goal of reducing threats to human health and the environment, and that could improve the performance of existing government programs. The recommendations would also make the current fee structures more equitable and effective in providing incentives to reduce the threats associated with toxic use and waste.

The recommendations presented in this document reflect this shared interest and desire to make Washington more sustainable – with a healthy environment, vibrant economy, and strong community enjoyed by current and future generations.



# Recommendations

The recommendations of the TRAC are presented below, organized by the main tasks outlined in the budget proviso. This report recommends nineteen actions and suggested program improvements intended to reduce the use of toxic substances, improve the effectiveness of Ecology's P2 planning technical assistance activities, and move away from "end of pipe" solutions.

These recommendations will provide a deliberate but phased shift from a focus on the management of hazardous wastes to addressing the greatest threats associated with toxic substances.

## Task 1: Review and develop recommendations to help businesses achieve a goal of reducing use of toxic substances by 50 percent.

**Discussion Summary:** The TRAC discussed extensively how businesses could reduce their use of hazardous substances and more broadly reduce the threats associated with toxics whether upstream (use) or downstream (waste). As noted in Key Findings, some committee members thought that the exclusive focus on use reduction suggested in the budget proviso was misplaced as opposed to addressing threats wherever they may be.

Also, the committee found it challenging to address use, given the current lack of data and reporting frameworks to keep track of hazardous substance use at the state level. Finally, the committee addressed this task considering the 50 percent goal as aspirational, so the recommendations presented here are intended to move towards reduced threats and use over the long term (rather than specifically cut use in half).

The committee agreed to nine recommendations as presented below.

- The first recommendation empowers Ecology to increase efforts to research, test, and promote safer chemical alternatives through partnerships with other governments, research institutions, and industry.
- The next five recommendations (1-2 to 1-6) provide a focus on "high priority hazardous substances" and a process to update the list of substances that present a toxic threat.
- Recommendation 1-7 recommends providing information to businesses about grants and incentives for the reduction of toxic threats.
- Recommendation 1-8 calls on Ecology to expand its collaboration with other entities to reduce threats from hazardous substances.
- Finally, recommendation 1-9 calls for a statewide incentive-based certification program, by expanding the highly successful regional EnviroStars program to the entire state.

## ***Recommendation 1-1***

**As a part of the existing Office of Waste Reduction established in RCW 70.95C, Ecology is charged with “administering a waste reduction and hazardous substance use reduction research and development program.” To help businesses reduce the use of hazardous substances, the office should implement programs that solve problems identified in partnership with businesses, other governments, and non-governmental organizations as barriers to more competitive, sustainable, and “greener” business practices. Emphasis should be on researching, testing, and promoting safer chemical alternatives.**

**Specifically, the program should include:**

- (a) Participation in an Interstate Chemicals Clearinghouse (IC2).**
- (b) Partnerships with higher education institutions to conduct research into potential hazardous substance issues, including the type and amount of hazardous substances used in Washington, development of safer chemical alternatives and green chemistry curriculum, and research on alternatives to high priority hazardous substances (funded in part by fees paid on high priority hazardous substances).**
- (c) Partnerships with trade associations and other business interests to identify industry-specific needs related to reducing the use of high priority hazardous substances, and researching safer chemical alternatives, life-cycle thinking and supply chain technical assistance.**

### **What problem does this recommendation solve?**

A comprehensive approach is needed to address the data gaps and technical assistance needs related to the use of hazardous substances in Washington State.

Current needs, which are unfulfilled include:

- Sharing of best pollution prevention practices and tools.
- Research into the type and amount of hazardous substances used in Washington, especially high priority hazardous substances.
- Research on which products contain hazardous substances.
- Green chemistry and engineering curriculum development and training.
- Partnerships that deliver solutions comprehensively and efficiently.
- Investigation of opportunities to help Washington State businesses respond to international initiatives such as REACH (Registration, Evaluation, Authorisation and Restriction of CHemicals).

**Note:** The Office of Waste Reduction will not address agricultural chemicals because there is already considerable research being conducted by other organizations in the state on safer alternatives.

**How does this recommendation solve the problem?**

*Interstate Chemicals Clearinghouse:* The Interstate Chemicals Clearinghouse (IC2), a concept developed by toxics reduction professionals in Massachusetts, would be a repository to collect and share information, resources, and solutions related to hazards and threats from hazardous substances. Supported by a number of states, it is a much-needed entity for collaborating and sharing information among state and local governments implementing industrial chemical management policies.

The IC2 would be designed to enhance the effective implementation of chemicals policies by bringing together existing research and data on chemicals – their hazards, presence in products, and availability of safer alternatives – and establishing new data, research and collaborations.

*Partnerships:* New partnerships with higher education, trade associations, and professional organizations will leverage state resources to build regional expertise on chemical hazard information and collaborative problem solving. Creating partnerships with government, higher education, and business on sustainable chemicals management will focus on real world problem solving and solutions to chemical substitution and safer chemical alternatives.

An example from a similar effort is the “*Five Chemicals Study*,” published in Massachusetts in 2006. In this study, chemicals with high priority uses and alternatives were identified with input from Massachusetts stakeholders. Alternatives were screened first to eliminate those with certain recognized high hazards and then assessed for key environmental, health and safety, technical, and financial indicators.

An accounting of the type and amount of hazardous substances used in Washington will facilitate the development of priorities for Ecology activities and future policy initiatives, on both high use and high threat bases, to achieve substantial use reduction in the state.

REACH is a new European Community Regulation on chemicals and their safe use (EC 1907/2006, effective June 1, 2007). There is a need to help Washington businesses understand their responsibilities under REACH and the potential implications of reporting and chemical substitution.

## ***Recommendation 1-2***

**Amend the definition of “hazardous substance” found in RCW 70.95C and Chapter 173-307 WAC to read:**

**“Hazardous substance” means:**

- (a) Any hazardous substance listed as a hazardous substance as of the effective date of this section in accordance with Section 313 of Title III of the Superfund Amendments and Reauthorization Act and any further updates;**
- (b) All ozone depleting compounds as defined by the Montreal Protocol of October 1987 and any further updates of the Montreal Protocol;**
- (c) All “high priority hazardous substances;” (see Recommendation 1-3) and**
- (d) Any other substance determined by the director by rule to present a threat\* to human health or the environment.**

**Note:** The proposed definition adds 42 substances to the current list of “hazardous substances.”

### **What problem does this recommendation solve?**

The current list of “hazardous substances” does not include substances that have become of concern since the definition was developed almost twenty years ago. This means that P2 planners are not required to address these substances in their P2 plans.

### **How does this recommendation solve the problem?**

This recommendation adds the substances on the “high priority hazardous substances” list to the definition of “hazardous substances.” This is necessary because there are substances on the Washington PBT and Metals of Concern list as well as known human carcinogens that are not considered “hazardous substances” in RCW 70.95C or Chapter 173-307 WAC.

The authority for the director to “add other substances by rule” is already given in RCW 70.95C but not in Chapter 173-307 WAC.

\*One member preferred the term “of concern” rather than “to present a threat,” to distinguish lower-priority substances from higher ones. Since these terms vary in degree and involve some scientific uncertainty, this distinction should be made during the process of periodic reviews prior to adding a substance.

## *Recommendation 1-3*

**Add a definition of “high priority hazardous substances” to RCW 70.95C and Chapter 173-307 WAC to include:**

- (a) Toxic substances found in Chapter 173-333 WAC, Persistent Bioaccumulative Toxics (the PBT list and metals of concern);**
- (b) Known human carcinogens (those used in manufacturing, services, and government) and**
- (c) Any other substance determined by the director by rule to present a threat to human health or the environment.**

### **What problem does this recommendation solve?**

There are currently about 700 “hazardous substances” as defined in RCW 70.95C and Chapter 173-307 WAC. Although they all have some potential for impacts to human health and/or the environment, some chemicals pose greater threats than others. The current definition of “hazardous substances” does not allow a priority to be assigned to those that pose a greater threat. Thus, adding the definition of “high priority hazardous substances” allows this effort to focus on the “worst of the worst” as the Committee generally agreed it should.

### **How does this recommendation solve the problem?**

Providing a definition about what constitutes “high priority hazardous substances” in statute will allow Ecology—during rulemaking with stakeholders—to identify and focus their efforts on the substances that pose the greatest toxic threats.

Thirty-three PBT’s and Metals of Concern are not already considered a “hazardous substance” in RCW 70.95C and WAC 173-307. Similarly, nine of the known carcinogens proposed to be added are not. See Appendix 2 for the list of high priority hazardous substances.

**Note:** A majority of TRAC members (with strong dissent by one member) favored a requirement that any changes to the list of ‘high priority hazardous substances’ would need to “sit” through a legislative session before taking effect. A similar requirement is found in the State Building Code. RCW 19.27.074 states that: “All decisions to adopt or amend codes of statewide application shall be made prior to December 1 of any year and shall not take effect before the end of the regular legislative session in the next year.”

## ***Recommendation 1-4***

**Periodically conduct a science-based public process to develop recommendations on:**

- (a) Amendments by rule making to the list of “hazardous substances” and “high priority hazardous substances.” Criteria to consider for additional substances should include, but not be limited to:**
  - **Human carcinogenicity.**
  - **Endocrine disruption.**
  - **Substances of high concern for children.**
- (b) Technical assistance and outreach priorities.**
- (c) Criteria for measuring success.**

**What problems does this recommendation solve?**

- (a) If there is no mechanism to add substances to the list of high priority hazardous substances, there is the danger of not addressing substances of concern that emerge because of new substances or additional data on existing substances.
- (b) Ecology does not always have the perspective to recognize opportunities that will lead to the greatest environmental benefits with the least expenditure of resources by the regulated community.
- (c) There is no established method for measuring success in reducing toxic threats. Although there are many methods to link quantities to threats, consensus does not exist as to which method is the most appropriate.

**How does this recommendation solve the problems?**

- (a) Periodic updating will keep pace with growing knowledge of emerging threats.
- (b) Input from a group with a variety of perspectives will help Ecology decide where to focus research and technical assistance efforts.
- (c) Reducing threats from hazardous substances can be measured in many ways; an acceptable method(s) should be agreed on with careful consideration of input from stakeholders.

## ***Recommendation 1-5***

**Add a requirement to RCW 70.95C and Chapter 173-307 WAC that P2 planners must include information on the “high priority hazardous substances” in the inventory and opportunity assessment portions of their P2 plans.**

**What problem does this recommendation solve?**

Currently, not all plans address the most hazardous substances being used.

### **How does this recommendation solve it?**

Current law requires that the “most toxic substances” be identified in the P2 plans and plans for their reduction be identified. A clear list of those substances would reduce ambiguity in the rule and allow more systematic development of reduction opportunities. With increased emphasis and technical assistance given on the most hazardous substances, plans should document opportunities for reduction better. Even documenting the reasons that reductions cannot occur will better identify barriers to be overcome.

**Note:** As in current law, the use and distribution of fertilizers or pesticides intended for commercial agricultural applications should be identified in plans, but an analysis of reduction opportunities does not need to be undertaken.

For identifying the concentration at which the substances need to be reported, no new testing is expected except to the extent that current laws call for it. The dangerous waste regulations allow using “generator knowledge” or testing, which has usually already been done to characterize a waste.

- The P2 planning regulation allows for using material safety data sheets and other information known to the manufacturer or user.
- If reporting hazardous substances and their amounts would “adversely affect the competitive position of the user,” current law allows requests to keep it from being disclosed publicly. This should be continued.

## ***Recommendation 1-6***

**Ecology should assist businesses by identifying which products include high priority hazardous substances.**

### **What problem does this recommendation solve?**

Businesses may use hundreds or thousands of different products. Some may contain high priority hazardous substances. Product-by-product searches can be lengthy and fruitless.

### **How does this recommendation solve the problem?**

By Ecology identifying which products contain high priority hazardous substances, businesses will be able to prioritize their reduction efforts.

## ***Recommendation 1-7***

**Ecology should provide information on tax incentives and grants that are available to facilities for improvements that lead to reducing toxic threats, including research and development of safer chemical alternatives, and capital improvements.**

### **What problem does this recommendation solve?**

Financial barriers prevent facilities from carrying out many projects related to reducing toxic threats.

### **How does this recommendation solve the problem?**

Tax incentives and grants will not solve all of the financial barriers that businesses, especially small ones, face in making improvements that reduce toxic threats. However, there are existing tax incentives, exemptions and deferrals that reduce the tax burden for businesses engaging in activities such as high technology, aerospace design, software, aluminum production, and green energy production. Ecology should research which of these could be used to fund activities that reduce toxic threats and provide that information to businesses.

One opportunity is for the Department of Revenue to include safer chemical alternatives and green chemistry research and development (R&D) as eligible under the High Technology Business and Occupation Credit (which allows up to \$2.0 million credit for R&D). Deferral of state and local retail sales/use tax is allowed for the construction of buildings, acquisition of machinery and equipment for projects involving research and development, or pilot scale manufacturing, including environmental technology and advanced materials.

The Manufacturers' Sales and Use Tax Exemption (M&E) applies to purchases by manufacturers or processors for hire of machinery and equipment used directly in a manufacturing operation. The M&E exemption requires that the pollution control equipment must be used “to prevent air pollution, water pollution, or contamination that might otherwise result from the manufacturing operation, testing operation, or research and development operation.” The inclusion of “pollution prevention” in the statute (WAC 458-20-13601) is aimed at protecting the public interest in reducing environmental hazards.

Creating more awareness about the M&E exemption through technical assistance could help manufacturers take advantage of this exemption for P2 project implementation.

## ***Recommendation 1-8***

**Ecology should continue working with federal, state and local agencies, and private organizations to administer programs related to reducing threats from the use of hazardous substances.**

### **What problem does this recommendation solve?**

A lack of coordination between partners limits success.



### **How does this recommendation solve the problem?**

As a part of the existing Office of Waste Reduction established in RCW 70.95C, Ecology is designated the coordinating center for all state agency programs that provide technical assistance to waste generators and hazardous substance users and is directed to serve as the state's lead agency for promoting such programs.

Increased coordination with local government and trade and public interest groups is necessary. In recent years, Ecology worked with:

- Several trade associations under Memorandums of Understanding. For example, working under an MOU with the Automotive Recyclers of Washington resulted in the removal of 45,000 mercury-containing switches from cars.
- Washington Management Services and Washington Department of Community Trade and Economic Development on various hazardous substance reduction projects.
- Puget Sound Partnership to develop the 2008 Action Agenda, including a toxics prevention and control strategy.

## ***Recommendation 1-9***

**Implement a statewide incentive-based certification/recognition program based on the regional EnviroStars program.**

### **What problem does this recommendation solve?**

Many businesses that work to reduce the environmental impacts from their operations have gone unrecognized.

### **How does this recommendation solve the problem?**

A program like this creates a useful incentive for a business in its marketing and advertising to communicate its successful efforts in reducing toxic threats.

As part of a Beyond Waste project, a consultant team worked with Ecology over a 10-month period in 2006-07 to develop a framework for a new business assistance and incentives program. The design and development process involved an advisory committee of 24 stakeholders representing business, government, and citizen interests to provide input and direction on the design of Ecology's program.

These efforts resulted in recommendations for a two-part program:

1. The Basics: a sector-based effort to achieve compliance across an entire sector. (This part of the program is being piloted through the Environmental Results Program auto body project.)

2. Beyond the Basics: a statewide program to recognize and reward environmental leadership. This part of the program would merge with the current EnviroStars program. The newly merged program would broaden EnviroStars' current focus on hazardous waste to include water, air, and climate and would expand the program geographically from the current five EnviroStars counties.

The expanded EnviroStars program would provide both environmental and business benefits for excellence and leadership in reducing environmental impacts. Members would receive information assistance, tools, and incentives to drive voluntary efforts to go beyond the basics and significantly reduce environmental impacts. The program offers participants the opportunity to save money, improve marketing opportunities, reduce liability, and impact the environment in a positive way.

The program is designed for small- and medium- sized business, but open to all. Large businesses and organizations willing to support the program and its members will receive special recognition as a program "Partner" – similar to the Co-Star and Recognized Leader status in the current EnviroStars program.

Not all businesses will choose to participate in or perceive a benefit from the program. For those that do, the keys to this recognition program being helpful are:

- Simplicity of participating in the program.
- No additional requirements for a business to participate.
- Active and consistent promotion by Ecology and other units of government through advertising and other promotion channels.

In awarding state contracts, the Department of General Administration should give preference to top performing EnviroStars. This will provide a significant incentive for businesses to achieve the top tier.

## Task 2: Review and make recommendations to improve the effectiveness and delivery of technical assistance in pollution prevention planning.

**Discussion Summary:** In the course of deliberations, the TRAC discussed the current P2 technical assistance program and identified options for improvement. Members agreed that there were significant benefits associated with the program, that it has been effective at reducing the amount of hazardous wastes generated, and that it has saved businesses in the aggregate far more in reduced hazardous waste management costs than the fees charged to run the program.

In identifying possible changes, members discussed the need for different technical assistance and reporting approaches depending on the size and knowledge base of a business. Most committee members agreed that smaller businesses should not be required to report detailed information on the hazardous substances used in their facilities. However there was also a general feeling that P2 planners should fully report their hazardous substances as required by the current law. Some members expressed concerns about standardized online reporting. Members were more comfortable with the requirement for a standard set of data, with flexibility on how that data would be reported.

On the issue of monetary incentives for reducing toxic threats, committee members agreed that, while there were some questions about the use of public money to pay for Lean & Green and Technical Resources for Engineering Efficiency (TREE) projects, the environmental benefits obtained through this type of engineering assistance are substantial.

This discussion led to recommendations for four main improvements designed to:

- Make reporting on hazardous substances more standard for larger users.
- Provide technical assistance to non-P2 planners using high priority hazardous substances.
- Provide education about safer chemical alternatives (not just about waste reduction).
- Increase the capacity to deliver services associated with two highly successful technical assistance efforts –“Lean and Green” and TREE.

These four recommendations will help ensure that the funds invested in the P2 planning program deliver maximum return to the businesses involved and the state as a whole – with assistance focused on addressing the highest priority hazardous substances using outreach methods that have proven to be effective and highly popular with businesses.

## *Recommendation 2-1*

**Pollution prevention planners should report on hazardous substances using a common set of elements. Reporting methods should be flexible but the results should be easily comparable.**

### **What problem does this recommendation solve?**

Existing planning regulations require P2 planners to inventory and report on the products they use that contain hazardous substances. Because reporting has been in formats that do not always allow easy comparison, targeting effective technical assistance and measuring progress toward reduction goals has been difficult.

### **How does this recommendation solve the problem?**

Planners should self-report on a standard set of data (such as internationally-recognized Chemical Abstract Service, or CAS numbers), online or by other alternative methods. This will provide information that can be analyzed with toxicity assessment tools to identify threats more accurately. Services can then be delivered based on threats.

For planners with an existing database, a “data interchange standard” can prevent them from having to enter the data into two separate systems. This has been successfully implemented already for dangerous waste reporting.

As in current law, de minimis amounts—amounts too small to inventory and report on—should be excluded, to reduce the reporting burden. However, high priority hazardous substances should be reported as fully as possible.

## ***Recommendation 2-2***

**For non-P2 planners, especially small businesses, using products containing high priority hazardous substances, Ecology should develop a voluntary business assistance program promoting safer alternatives.**

### **What problem does this recommendation solve?**

Current programs to reduce toxic threats are not suitable for small businesses and small users of hazardous substances.

### **How does this recommendation solve the problem?**

For large users of hazardous substances, P2 plans have historically been the document that reports the amount of use. A P2 plan’s relative complexity suits the complexity of the largest users of hazardous substances.

But for non-P2-planners that use high priority hazardous substances, a new program should be developed emphasizing voluntary measures by smaller firms. It should inform them of the risks of the substances or products, provide information about safer alternatives, and offer simple voluntary ways of reporting information.

Instead of imposing the same reporting requirements on all businesses for all possible high priority hazardous substances, Ecology should identify likely types of smaller firms using products containing those substances and develop a voluntary reporting program.

Ecology should establish partnerships with associations and other industry leaders to develop and provide education about less hazardous substances and products.

In some cases, as an alternative to reporting, Ecology should conduct voluntary surveys to measure the reduction of the use of the high priority hazardous substances in these small business sectors.

Education, reporting and incentives should include:

- Simple technical assistance materials and information requests which concentrate on the products most likely to contain high priority hazardous substances.
- Practical advice on ways to reduce or eliminate use of the product, including information on safer chemical alternatives.
- Voluntary pledges to reduce or eliminate the use of the product.
- Lists of peers willing to offer advice on reduction methods.
- In some sectors, associations may be able to report on behalf of their members.
- Waiving the Hazardous Waste Generation Fee or others for those who switch to products which do not contain high priority hazardous substances.
- Statistically valid sampling of hazardous substance use at small sources could establish baselines and progress toward statewide reduction goals.

No matter what type of information gathering is used, a consistent method should be established to track progress. For businesses using small amounts of hazardous substances, totals derived from sampling or business association surveys should be compatible with a consistent method.

Technical assistance for small businesses will be critical to the successful implementation of this recommendation. Having Ecology identify products that contain high priority hazardous substances will be critical to making this workable for smaller firms, along with voluntary reporting methods that accommodate the unique needs of smaller businesses.

EnviroStars criteria should include changing to less toxic alternatives and voluntarily reporting.

## *Recommendation 2-3*

**Ecology should provide safer chemical alternative technical assistance to businesses and government who request help to reduce threats from hazardous substances.**

These services should include:

- Using Ecology's proposed classification and prioritization process to identify high priority hazardous substances in the products used by businesses and government.

- Providing tools to businesses will allow them to voluntarily undertake substance assessments and prioritization processes.
- Assisting with chemical substitution and alternative assessments.
- Providing onsite technical assistance and workshops.

### **What problem does this recommendation solve?**

Ecology's current technical assistance emphasizes hazardous waste reduction more than hazardous substance use reduction.

### **How does this recommendation solve the problem?**

Using tools to assess and prioritize hazardous substances used by businesses, will focus technical assistance on the highest priority chemicals and provide information on safer alternatives. These new tools will help businesses remain competitive in the global marketplace and support safer workplaces.

The potential societal benefits include reduced healthcare costs associated with hazardous substances and workforce exposure to these materials. Better information on toxicity, workplace exposure, and occupational disease will provide state agencies and businesses with additional incentives to develop safer technologies.

## ***Recommendation 2-4***

**Ecology should increase the resources and partnerships devoted to Lean & Green and TREE projects.**

### **What problem does this recommendation solve?**

Many businesses could benefit from Lean & Green and TREE assistance, but there are limited resources available for marketing and performing these services. Potential savings remain untapped. Ecology should continue to partner with the Washington Manufacturing Service and other organizations to leverage state resources.

### **How does this recommendation solve the problem?**

As described below, Lean & Green and TREE projects have already been successful in saving companies money and conserving resources. Additional funding for these programs will increase the number of companies who will benefit.

*Lean Manufacturing:* Many Washington businesses are turning to lean manufacturing techniques to improve their competitiveness. Based on the Toyota Production System, "lean" identifies and eliminates wastes and non-value-added activities. Aerospace manufacturers, cabinet-builders,

hospitals, and shipbuilders are all using lean to lower costs, improve quality, and reduce lead times. But environmental wastes traditionally are not identified.

So, in a twist to the traditional approach to lean manufacturing, Ecology has helped businesses identify significant environmental benefits when the non-value added aspects (waste) of production are translated into higher energy and water savings, and fewer releases to the air, land, and water. When businesses consider wasted resources and hazardous substances in their activities, lean and environmental performance benefits increase.

A recent twelve-month progress report on three “Lean & Green” projects—Canyon Creek Cabinets, Columbia Paint and Coatings and Lasco Bathware—identified a group savings of \$1.6M annually, fewer hazardous substances used, and thousands of pounds of wastes and emissions reduced.

*Technical Resources for Engineering Efficiency (TREE):* Another innovative approach that addresses environmental needs at a facility level is the TREE Team. TREE demonstrates the potential cost savings of reducing environmental impacts at the process level. Made up of engineers and specialists from several Ecology programs, the team goes to the facility, sometimes for extended periods, to research, model, and engineer ways to reduce resource use and waste generation while saving money. TREE documents the opportunities and potential benefits in a report, which they present to the facility, then encourages clients to implement these pollution prevention opportunities. Unlike many other forms of Ecology technical assistance, the TREE projects include a comprehensive cost analysis of process changes to improve a client’s operations that are not necessarily limited strictly to a single environmental regulation.

Many projects are conducted at smaller businesses where staffing and funding for environmentally focused process improvement often don’t exist. TREE has been recognized by the governor and nationally as a leading example for effective technical assistance.

Given current resource levels, TREE typically works with three to five companies per year. Since its inception in 1998, at companies like Mikron Industries, Twin City Foods and Richlite, the team has made suggestions that could annually:

- Save the companies a total of \$2,500,000.
- Reduce hazardous waste generation by 235,000 pounds.
- Reduce water use by 220 million gallons.

It is not an accident that environmental results follow process improvements designed to improve quality and save money. It is said what gets measured gets managed. This is true for protecting the environment as well.

### Task 3: Develop recommendations for strategies to encourage moving away from "end-of-pipe" pollution reduction approaches to increase hazardous waste prevention throughout the state.

**Discussion Summary:** The TRAC discussed the most important threats associated with hazardous substances and the benefits of preventing both the use of and waste associated with these substances. Committee members noted that this task from the Legislature focuses on hazardous waste prevention, rather than eliminating use, which is the main thrust of the budget proviso. Members, however, agreed that the two issues are highly related (i.e., a reduction in hazardous substance use usually leads to a reduction in hazardous waste as well.)

The committee also discussed how best to provide incentives to businesses to reduce both their hazardous waste generation and their use of hazardous substances. Members identified the difficulty associated with businesses making changes to their products and operations, including lack of knowledge, risks (e.g., feasibility, compatibility with business operations), and the costs associated with making changes.

The committee agreed to the two recommendations presented below. The first recommendation allows Ecology to accept advanced environmental management systems in lieu of the traditional P2 planning format. The second one recommends that monetary incentives should be established to encourage the reduction of toxic threats – the specific incentives mentioned in the recommendation are a revolving loan fund and a voucher program.

#### *Recommendation 3-1*

**Allow advanced environmental management systems as alternatives to P2 plans. These alternatives may include any system deemed adequate by the Director of Ecology as long as it addresses reducing toxic threats and achieves the aims of RCW 70.95C and Chapter 173-707 WAC. Ecology should provide technical assistance services to businesses in the state seeking to use these advanced management systems.**

#### **What problem does this recommendation solve?**

For some businesses and agencies who have adopted continuous improvement approaches, certification requirements, and trade group or global environmental performance models, a static P2 plan with annual progress reports and updates every five years is not nimble enough, nor reflective of the organization's culture or business needs.



### **How does this recommendation solve the problem?**

For these facilities, a flexible planning and performance approach is warranted. Often called Plan, Do, Check, Act in continuous improvement circles, environmental performance standards have been adopted and adapted in many forms.

Ecology developed guidance in 1997 to provide an “Alternative to Pollution Prevention Planning” based on the Environmental Management System principles found in ISO14001. Currently over 30 business organizations and federal agencies are enrolled in this program adopted by policy. The law should incorporate this policy. There is now an opportunity to add approaches that are equal to or exceed the requirements for P2 planning.

Examples might include Environmental Management Systems based on ISO 14000, the Global Reporting Initiative, The Natural Step and “eco-mapping.” However, these alternatives should include a common set of data on hazardous substances. The alternatives should be well documented and approved by Ecology with expert input.

## *Recommendation 3-2*

**Establish monetary incentives to encourage businesses to implement projects that will result in the reduction of toxic threats. Two specific ideas for incentives are:**

- **Increasing the funds available in the revolving loan account established by the “Small Manufacturers—Innovation and Modernization—Funding” bill (SSB 6510).**
- **A voucher program reimbursing—to a small fixed level—improvements at businesses, which will lead to reduction of toxic threats.**

### **What problem does this recommendation solve?**

Monetary incentives are a key factor to encourage the reduction of toxic threats. A survey of hazardous waste generators conducted as a part of the Beyond Waste Project indicated that many think that pollution prevention “costs too much” and this is seen as a barrier. The focus groups indicated a high level of support among smaller businesses for low-interest loans to fund environmental improvements. (The larger businesses were not opposed to a low-interest loan program; they were just unlikely to use or need them.)

### **How does this recommendation solve the problem?**

A spectrum of monetary incentives should be established or identified for all sizes of projects. (For funding sources, see Appendix 3.)

Some large projects (several to tens of millions of dollars) which lower toxic threats, such as a major retooling of a manufacturing line, may benefit from the existing tax-exempt, economic development revenue bonds issued by the Washington Economic Development Finance Authority.

Medium-sized improvements which lower toxic threats are eligible for revolving fund loans from the fund established in 2008 in the “Small Manufacturers—Innovation and Modernization—Funding” bill (SSB 6510). This fund is administered by the Department of Community, Trade & Economic Development, which provides oversight and screening of applicants. A broad range of services by the Washington Manufacturing Service may be paid for, including environmental health and safety. Increasing the funds in this revolving loan program could provide businesses affordable financing or improved equipment and other capital expenditures that will reduce the amount of hazardous waste produced and hazardous substances used in manufactured products.

Small incentives (hundreds of dollars) are also effective. A voucher program partly reimburses businesses that pay for changes suggested by technical assistance providers. A successful voucher program is in place in King County. A business pays for a change that decreases a toxic threat, then applies for up to five hundred dollars of matching money. Hundreds of businesses use vouchers annually and spend three dollars on average for every dollar of reimbursement. Since this is the return of a portion of the business’ fees, this is not a “public gifting.” Since the average amount is low and any business may request a visit that could result in a voucher, this has not been perceived as an alteration of the “level playing field.”

**Task 4: Review and make recommendations on revising the hazardous waste planning fee under RCW 70.95E.030, including opportunities to provide incentives that reward businesses for toxic use reduction successes in meeting a 50 percent toxics use reduction goal.**

**Discussion Summary:** The TRAC concluded deliberations by examining the hazardous waste planning fee currently paid by approximately six hundred companies in the state. These companies either generate more than 2,640 pounds of hazardous waste annually or they report under the federal Toxics Release Inventory (TRI) emissions due to the use of large amounts of hazardous substances.

The committee focused first on the “fee structure,” that is, the formulas used to calculate the fee paid by each company, the current per facility cap on those fees, and several exemptions that are now in effect. The committee then discussed the “fee level,” or total amount of revenue generated by the fee to fund the hazardous waste planning program. Revenue is currently set at \$1.83 million, adjusted for inflation annually.

At its initial meeting the committee formulated four questions to guide its discussion about fees:

1. How can the fees be made more equitable?
2. How can the fees be structured to create incentives for toxics use reduction?
3. Should the fees be based on something other than waste generated?
4. Should the revenue collected by the fees to fund Ecology's hazardous waste program be increased? If so, by how much?

At its second meeting, the committee reviewed and discussed how fees are established in other states, including Massachusetts, Oregon, and Minnesota. This discussion concluded with the committee asking Ecology and one of its members, Alan Durning of the Sightline Institute, to create several scenarios of alternative fee structures that would address the first three questions posed above.

These scenarios and the underlying issues were debated at length in the third meeting, with initial decisions made and consensus formed around some principles and new directions. Specifically, there was widespread agreement that the fee should be made fairer and that some of the exemptions could and should be eliminated. Committee members also generally agreed to the concept that the fees should be "tuned" to the toxic threat – that is, where the potential impact of toxics is greater (associated with either use, emissions, or waste) – the fees paid should also be greater.

These changes would have some companies paying more, but many others paying less than their current fees. At its final meeting the committee discussed these impacts and considered alternative options to increase fairness and "tune" the tax to toxicity. The committee also discussed changing the fee revenue. The committee found it harder to reach consensus on specific changes that would raise the fee for some companies even though those changes would reduce the fee for many others. The committee also did not reach consensus on increasing revenue.

These deliberations are summarized in more detail below:

***1. How can the fees be made more equitable?***

There was wide agreement at several meetings that fees should be redistributed by raising the maximum amount paid (the "cap") by a small group of payers with the highest waste and emissions. Although the committee supported raising the cap, removing it entirely seemed too much of a financial burden to a few companies. The committee discussed using a phase-in approach to lessen the burden.

They also favored several steps to close what were perceived of as loopholes, where very large emitters of hazardous substances pay no fee at all if they have low amounts of hazardous waste.

Some large fee payers discussed not getting services in proportion to their fee. While some ideas were generated about what services would benefit them, the committee largely believed that the level of service didn't need to be strictly proportional, and that the public interest was served by some subsidization of services to smaller fee payers.

### ***2. How can the fees be structured to create incentives for toxics use reduction?***

The committee spent a large amount of time discussing incentives that would lead to the reduction of toxic threats. The most viable of the many incentives discussed are included in previous recommendations (1-7, 1-9, and 3-2). Since lowering a fee is a form of incentive, the fee structure is based on the belief by many of the committee members that a higher fee for the highest priority hazardous wastes and emissions would prompt reductions of the most toxic threats.

### ***3. Should the fees be based on something other than waste generated?***

After discussions in early meetings, many committee members favored an approach of "going where the risk is," whether it appears during the use, disposal or emissions of hazardous substances. Fees are currently based only on wastes generated and hazardous substances emitted. No existing reporting requirement, which accounts for the use of hazardous substances, is comprehensive enough to base fees on. Therefore, the committee favored using existing reports on waste and emissions to the environment as an indirect indication that hazardous substances are being used.

One member opposed fees based on the emission of hazardous substances, partly because of limitations of the TRI and partly because other environmental fees are based on the same emissions.

### ***4. Should revenue be increased?***

Ecology estimated the cost associated with implementing the recommendations presented in this report (see Appendix 3). The total came to \$900,000 annually for the next 4 years.

Committee members, while supportive of the recommendations, were reluctant to agree to recommending an increase in fees at this time – especially in light of the financial crisis and worsening business climate. Several members argued that, given the value of the program, full funding should be recommended, no matter the current political and economic climate. Other members were concerned that the time was not good for changing fees. One member refused to support any increase in program funding. Accordingly, there was no consensus on asking the legislature to increase fees in the upcoming legislative session.

Committee members did identify their priorities for funding of the initiatives requiring new revenue which were included in the recommendations presented above. The top three priorities selected using a ranking process are listed in Recommendation 4-1 below. The complete results of this ranking process are presented in Appendix 4.

As deliberations concluded, the committee members asked Ecology to meet with other stakeholders, such as the Association of Washington Business (AWB), to obtain suggestions about the following:

- The amount and timing of fee increases that might be feasible.
- What services larger fee payers would find valuable in light of higher fees.
- Whether the multiplier factors used in the fee structure needed to be modified.

Ecology met with interested members of the AWB, most of whom did not support any increase in the fees.

In the context of these deliberations, four fee-related recommendations are put forth for consideration by the legislature.

### *Recommendation 4-1*

**The committee does not recommend raising more revenue from the hazardous waste planning fee at this time, but new funds, when available, should be dedicated to the highest priority committee recommendations. These are:**

- **Recommendation 1-1: Research hazardous substance alternatives in partnership with higher education institutions.**
- **Recommendation 1-1: Participate in an Interstate Chemicals Clearinghouse.**
- **Recommendation 1-8: Develop a statewide incentive-based certification/recognition program.**

### *Recommendation 4-2*

**Revise the basis for the hazardous waste planning fee to make the fees charged more proportional to the toxicity and threat posed by the waste and emissions discharged by a facility.**

- (a) The fee formula in 173-305-220 WAC should be amended to add “risk pound” multipliers. The example multipliers proposed and recommended are:**
- **Ten (10x) for high priority hazardous substances in certain wastes and emissions (see Table 2 below).**
  - **One hundred (100x) for high priority hazardous substances released to air and water.**

- (b) Ecology should communicate clearly to the facilities subject to this fee how their individual fees are calculated and how those fees reflect the toxic threat associated with their waste and/or emissions.**
- (c) Ecology should pilot an alternative fee program using advanced toxicity analysis methods that takes into account “risk weighing methods” and a comprehensive set of toxic effects. Participation in this program would be optional and participating facilities would be involved in the pilot design. The approach would be different from the multipliers specified above and the fee formula found in Chapter 173-305-220 WAC.**

**What problems does this recommendation solve?**

- (a) Current pollution prevention planning law and fees do not reflect the huge variability in toxic threats from hazardous substances. One substance can be millions of times more likely to cause ill effects than another.
- (b) Although fee invoices are currently sent with general information about how fees are calculated, individual information is not provided about how a given facility’s bill is calculated. This lack of detail makes it more difficult for management of a facility to understand how their waste or emissions contributes to their fee.
- (c) A pilot program for a small number of facilities could make a more comprehensive and accurate assessment of toxic threats than is possible with existing reporting. More information is needed about the two critical components for a risk assessment (hazard and exposure). But if this information currently collected at some facilities was shared with Ecology, a fee more accurately tied to toxicity could be set.

**How does this recommendation solve the problems?**

- (a) This recommendation only partly solves the problem of huge variability in the toxicity of different hazardous substances. It is a compromise that simplifies toxicity into only three levels rather than millions. But as the partial basis for the determination of the fee, it sends a clear message about which high priority hazardous substances are of most concern. That message can lead to more focused reduction efforts.

The organizing principle of this recommendation is that hazardous substances that are emitted into the environment, especially high priority hazardous substances, pose more of a toxic threat than if they are contained and managed as hazardous waste.

The factors ten and one hundred were picked to clearly communicate priorities to fee payers. They do not express the true range of toxicity of the underlying substances. The current structure recognizes a smaller category of “extremely hazardous waste,” but does not include a large number of wastes with similar toxicities that contain high priority hazardous substances. Alternative factors may be discovered or refined through more research.

**Table 2: Proposed multiplication factors for “risk pounds” used to calculate fees (173-305-220 WAC)**

	Current Rule	Proposed: High Priority Hazardous Substances (HPHS)	Proposed: Non-HPHS
<b>Toxics Release Inventory (TRI)</b>			
TRI emissions to air/water	1	100	10
TRI on-site land disposal		10	1
<b>Hazardous Waste</b>			
Extremely hazardous waste	10	10	10
Dangerous waste	1		1

**Note:** Possible exceptions (regarding wastes such as P-coded, certain F-coded, certain Washington-only persistent waste, and “special wastes”) need further analysis.

- (b) A clear explanation of how the specific fee for a given facility is calculated and how the most toxic hazardous substances contribute to that fee would allow more focused reduction efforts.
- (c) Facilities that have already embarked on toxic reduction efforts should benefit from an optional, more advanced analysis, which uses the information they have gathered for their own business goals. Other facilities should benefit from the pilot project’s discovery of a set of practical measurements that clearly demonstrate decreasing toxicity.

This pilot project should use expert stakeholders to review risk-weighting methods. To make program funds predictable, there should be a small number of participating facilities.

### *Recommendation 4-3*

**Redistribute the hazardous waste planning fee among the fee payers, to make it more proportional to the amount of their waste and emissions.**

- (a) The “cap,” or maximum percentage of the total fees collected that are paid by any one facility, should be increased with a phased-in approach. This change means that some larger generators will pay more in fees while most smaller generators will pay less.**
- (b) The fees of facilities that report under TRI should be based on the amount of emissions discharged to the environment, regardless of the amount of hazardous waste generated. Currently, these types of facilities only pay a \$60 fee if their hazardous waste generation is less than 4,000 pounds annually.**
- (c) The minimum fee charged to a facility should at least equal the transaction cost of collecting that fee. This fee should be equal to or greater than the fee charged for generating 2,640 pounds of waste and emissions.**



## **What problem does this recommendation solve?**

Reforms to the fairness and effectiveness of the hazardous waste planning fee have been studied three times. Those reports<sup>1</sup> describe in more depth many of the problems identified in this report. As time goes on, these inequities become greater making the need for action more urgent.

The problem statements that follow—as well as their solutions—have one underlying goal: to the greatest extent possible, the rate per pound of waste and emissions used to calculate the planning fee should be the same for all facilities. Artificial ceilings and floors as well as exemptions should be removed to promote a level playing field and make the fee transparent and simple.

### *(a) Cap Inequities*

Legislation restricts the amount of fees collected from individual facilities through the use of a one percent fee “cap.” The cap is the maximum percentage of the total fees collected paid by any one fee payer. Since \$1.83M was collected in 2008, the cap equaled \$18,300.

A fee cap at that percentage level created inequities, especially a large and growing disparity between the per pound rates paid by capped and non-capped facilities. The fee rate is the amount assessed per pound of waste generated or emitted into the environment. This effect was examined in Sightline Institute’s study “*Policy Analysis: Bulk Discounts for Polluters.*”

Another large and growing disparity between capped and non-capped facilities is the amount of increase of the fees (see Table 3: Historical Trends in Fees).

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<sup>1</sup> Department of Ecology. 2003. *Beyond Waste Issue Paper: Fee Systems*, go to [www.ecy.wa.gov/biblio/0304046.html](http://www.ecy.wa.gov/biblio/0304046.html).

Sightline Institute. 2007. *Bulk Discounts for Polluters*, go to [www.sightline.org/research/pollution/res\\_pubs/bulk-discounts-analysis](http://www.sightline.org/research/pollution/res_pubs/bulk-discounts-analysis).

WA State Legislative Budget Committee. 1995. *Hazardous Waste Fees Study-Report 95-11*, go to [www.ecy.wa.gov/programs/hwtr/TRAC/documents.html](http://www.ecy.wa.gov/programs/hwtr/TRAC/documents.html).



**Table 3: Historical Trends in Fees**

	1994	2004	2007
Number of P2 planners	686	446	502
Number of facilities at the capped fee	63	50	51
Capped facilities' percentage of total waste	99.8%	93%	92%
Capped amount (maximum fee)	\$10,943	\$14,788	\$17,100
<b>Capped facilities' fee increase over years</b> (tied to inflation)	N/A	35%	<b>56%</b>
Number of Non-capped facilities	382	295	264
Non-capped fee rate per risk pound	.013	.078	.125
Non-capped facilities portion of total fees raised	39%	52%	49%
<b>Non-capped facilities' fee increase over years</b> (per formula)	N/A	500%	<b>862%</b>
Number of facilities over 2,640 but < 4,000 pounds that pay a minimum fee	35	57	59
Minimum fee increase over years (\$50 to \$60)	N/A	20%	20%
Number of facilities that pay no planning fee	206	43	128

*(b) Low-Waste Toxics Release Inventory (TRI) Exemption*

Dozens of TRI reporters during a recent year paid a \$60 fee or even no fee at all. Collectively, these reporters emitted over four and a half million pounds of hazardous substances, nearly a quarter of the amount emitted into the environment by TRI reporters state-wide. Fees should be applied to these releases, which are estimated by modeling to be more of a toxic threat than hazardous waste going to a hazardous waste landfill.

This situation occurs because the current rule has a threshold, which does not include emissions from TRI reporters. Only when a facility emits more than four thousand pounds do its emissions become fee eligible. This exemption should be removed so that the fee is applied to pounds of TRI emissions to the environment in the same way that the fee is charged on waste.

**Table 4: Hypothetical Examples of Low-Waste TRI Exemption Using 2008 Rates**

	Pounds of Hazardous Waste	Pounds of TRI Emissions	Fee
Facility 1	3,900 pounds	500,000 pounds	\$60
Facility 2	4,100	500,000 pounds	\$18,300 (maximum fee possible)
Facility 3	4,100	None	\$440

Another negative effect of this exemption is the dramatic rise and fall in fees paid by facilities that are above the threshold some years and below in others. Sudden changes in the fee causes perceptions that fees are arbitrary and are not charged in proportion to the amount of waste and emissions.

*(c) The “Flat Fee”*

The minimum fee paid under the current program is \$60, known as the “flat fee.” This fee is paid by facilities that generate more than 2,640 pounds but less than 4,000 pounds of waste. If the fees were not flat, but calculated at the rate paid by most of the facilities in 2008, they would range from approximately \$290 to \$440. Thus, the flat fee is an artificially low amount that does not bear a strong relationship to the amount of waste (or emissions, if the low-waste TRI exemption is changed).

**How does this recommendation solve the problem?**

*(a) Cap Inequities*

Increasing the cap would redistribute the fees paid by facilities in a manner which would—depending on the cap chosen—lessen the rate disparities and increase the number of facilities with an incentive to lower their fee by decreasing their waste and emissions.

Increasing the cap has the following effects (with revenue held constant):

- A decreasing number of facilities pay the maximum fee.
- The maximum fee paid increases.
- An increasing number of facilities pay a smaller fee.
- An increasing number of facilities pay a fee proportional to the amount of their waste and emissions.

**Table 5: Effects of raising cap**

Fee cap %	1% (Current Cap)	2%	3%	4%	5%
Number of facilities paying the maximum fee	53	24	14	6	4
Maximum fee paid (to collect \$1.8M)	\$18,300	\$36,600	\$54,900	\$73,200	\$91,500
Number of facilities paying a smaller fee	N/A	372	410	414	419

*(b) Low-Waste Toxics Release Inventory (TRI) Exemption*

Basing fees on all wastes and all emissions, except at levels that are below the cost of collecting, is a much-needed action to level the playing field between comparable facilities. This would lead the facilities, which collectively emit more than four million pounds of hazardous substances to prioritize reduction efforts for the same reasons as their peers.

*(c) The “Flat Fee”*

Removing the flat fee would remove a complicating feature of the fee that prevents almost 100 facilities from understanding how their fee relates to their waste and emissions.

## *Recommendation 4-4*

**Offer a discounted fee for electronic reporting.**

**What problem does this recommendation solve?**

A voluntary electronic reporting system lowers transaction costs for Ecology, but sometimes poses problems (software compatibilities, ease of reporting, etc.) for facilities.

**How does this recommendation solve the problem?**

An incentive would increase the use of electronic reporting, in turn increasing the timeliness and accuracy of what is reported. The higher quality information would enable Ecology to respond to emerging threats and offer value-added reports, educating the reporters about the nature of the hazardous substances they are using.

# Appendix 1

## Toxics Reduction Advisory Committee Members

**Mr. Ray Carveth**, King County Local Hazardous Waste Management Program

**Mr. Wayne Clifford**, Washington State Department of Health

**Ms. Joyce Cooper**, University of Washington – Department of Mechanical Engineering

**Mr. Alan Durning**,\* Sightline Institute

**Mr. Kelly Flynn**, BP Cherry Point

**Mr. Jim Jesernig**, Agricultural industry representative

**Mr. Steve Gilbert**, Institute of Neurotoxicology & Neurological Disorders

**Mr. Ray Lam**, Boise Cascade Paper Division

**Mr. Alan Link**, Washington State Labor Council

**Ms. Mo McBroom**, Washington Environmental Council

**Mr. Mel Oleson**,\* The Boeing Company

**Mr. Darin Rice**, Washington State Department of Ecology

**Ms. Claudia Rojas**, Crown Cork and Seal Co.

**Ms. Ivy Sager-Rosenthal**,\* Washington Toxics Coalition

**Mr. Gary Smith**,\* Independent Business Association

\* Fee subcommittee member.

## Appendix 2

### High Priority Hazardous Substances

**Table 6. Chemicals, Chemical Groups on the PBT List and the Metals of Concern List**

Metals	Flame Retardants	Banned Pesticides	Organic Chemicals
Methyl-mercury	PBDEs Tetrabromobisphenol A Hexabromocyclododecane Pentachlorobenzene	Aldren/Dieldrin Chlordane DDT/DDD/DDE Heptachlor epoxide Toxaphene Chlordecone Endrin Mirex	1,2,4,5-TCB Perfluoro-octane sulfonates Hexachlorobenzene Hexachlorobutadiene Short-chain chlorinated paraffins Polychlorinated naphthalenes
Combustion By-products	Banned Flame Retardants	Banned Organic Chemicals	Metals of Concern
PAHs PCDD PCDF PBDD/PBDF	Hexabromobiphenyl	PCBs	Cadmium Lead

**Table 7. Selected Known Human Carcinogens** (used in manufacturing, services and government)

*From "Group 1" carcinogens, International Agency for Research on Cancer (IARC), a part of the World Health Organization.*

CAS number	Chemical Name
50-00-0	Formaldehyde
50-32-8	Benzo[a]pyrene
52-24-4	Thiotepa
71-43-2	Benzene
75-01-4	Vinyl chloride
75-21-8	Ethylene oxide
91-59-8	2-Naphthylamine
92-67-1	4-Aminobiphenyl
92-87-5	Benzidine
95-53-4	Ortho-Toluidine
101-14-4	Methylenebis(chloroaniline) (MOCA)
106-99-0	1,3-Butadiene

CAS number	Chemical Name
107-30-2	Chloromethyl methyl ether (technical-grade)
505-60-2	Mustard gas (Sulfur mustard)
542-88-1	Bis(chloromethyl)ether
1303-00-0	Gallium arsenide
1332-21-4	Asbestos
1333-82-0	Chrome trioxide (hexavalent chrome)
1746-01-6	2,3,7,8-Tetrachlorodibenzo-para-dioxin
7440-38-2	Arsenic
7440-41-7	Beryllium
7440-43-9	Cadmium
8007-45-2	Coal-tars (mixture)
13909-09-6	1-(2-Chloroethyl)-3-(4-methylcyclohexyl)-1-nitrosourea (Methyl-CCNU; Semustine)
16543-55-8	N'-Nitrosornicotine (NNN)
64091-91-4	4-(N-Nitrosomethylamino)-1-(3-pyridyl)-1-butanone (NNK)
65996-93-2	Coal-tar pitches (mixture)
66733-21-9	Erionite
68308-34-9	Shale-oils (mixture)
N020 (TRI reporting code)	Arsenic compounds
N050	Beryllium compounds
N078	Cadmium compounds

# Appendix 3

**Table 8. Ecology's Estimate of the Resources Needed to Implement the TRAC Recommendations**

		FY 09-11		FY 11-13			Notes
Recommendations		Dollars	FTE	Dollars	Dollars	FTE	<ul style="list-style-type: none"> <li>▪ At \$300 K per biennium per FTE</li> <li>▪ Dollars in thousands</li> </ul>
Number	Task	HWAA*	HWAA*	HWAA*	STCA**		
1-1	Office of Waste Reduction R&D	500	1	750		2*	\$200K contractual for toxics reduction and safer alternatives R&D; program coordinator.
1-2	Amend definition of hazardous substance						
1-3	Add definition of high priority hazardous substances (HPS)						
1-4	Periodic public process	50		50			Use existing resources for public process; \$50K contractual for stakeholder support.
1-5	Amend P2 plan requirements for HPS						
1-6	Small business technical assistance-identify products containing hazardous substances						
1-7	Tax incentives assistance			300		1*	Incentives assistance.
1-8	Coordination with partners						
1-9	EnviroStars Program	400	1	500		1*	EnviroStars position; \$100K contractual support.
2-1	Standardized reporting for planners	700		100			Contractual support, one time.
2-2	Small business/sector technical assistance	50		100			Use existing resources; \$50K contractual for reporting.
2-3	Toxic threats technical assistance						
2-4	Expanded engineering assistance				1,400	4.6**	
3-1	Advanced environmental management systems assistance	100					Technical assistance to businesses on EMS and other alternatives to P2 plan.
3-2	Revolving loan/vouchers				5,200		\$5.0M one time for revolving loan; \$200K vouchers.
<b>Total</b>		<b>1,800</b>	<b>2</b>	<b>1,800</b>	<b>6,600</b>	<b>4</b>	

\*Hazardous Waste Assistance Account

\*\* State Toxics Control Account

## Appendix 4

**Table 9. Prioritization Voting Results**

Number	Recommendation	Rank
1-1	Partner with higher education institutions to research hazardous substance issues, including the type and amount of hazardous substances used in Washington; research alternatives to high priority hazardous substances; and develop a green chemistry curriculum.	1 <sup>st</sup>
1-1	Participate in the Interstate Chemicals Clearinghouse (a repository to collect and share information, resources and solutions related to toxic threats).	2 <sup>nd</sup>
1-9	Develop a statewide incentive-based certification/recognition program (e.g., EnviroStars) in conjunction with the small business technical assistance program.	3 <sup>rd</sup>
3-2	Acquire additional funds for Revolving Loan Fund established in “Small Manufacturers Innovation and Modernization Funding” bill (SSB 6510) to pay for projects that lead to the reduction of toxic threats.	4 <sup>th</sup>
2-2	Focus technical assistance and simple information requests on small users of high priority hazardous substances.	5 <sup>th</sup>
2-4	Expand engineering assistance services to businesses (e.g., Lean & Green and TREE).	6 <sup>th</sup> (tie)
3-2	Develop a Voucher Program to reimburse businesses for improvements that lead to the reduction of toxic threats.	6 <sup>th</sup> (tie)
1-1	Dedicate a percentage of the fees collected on high priority hazardous substances to research safer alternatives to those substances.	7 <sup>th</sup> (tie)
2-1	Standardize reporting of hazardous substances by P2 planners enabling value-added reports (e.g., toxicity analyses and material efficiency) for both businesses and Ecology.	7 <sup>th</sup> (tie)