Beyond Waste Plan

2009 Update

Summary of the Washington State Hazardous Waste and Solid Waste Management Plan

DEPARTMENT OF ECOLOGY
State of Washington

October 2009
Publication no. 09-07-026

Publication and Contact Information

This report is available on the Department of Ecology's website at
www.ecy.wa.gov/biblio/0907026.html

For more information contact:

Waste 2 Resources Program
P.O. Box 47600
Olympia, WA 98504-7600

Phone: 360-407-6900

Washington State Department of Ecology - www.ecy.wa.gov

○ Headquarters, Olympia	360-407-6000
○ Northwest Regional Office, Bellevue	425-649-7000
○ Southwest Regional Office, Olympia	360-407-6300
○ Central Regional Office, Yakima	509-575-2490
○ Eastern Regional Office, Spokane	509-329-3400

To ask about the availability of this document in a format for the visually impaired, call the Waste 2 Resources Program at 360-407-6900. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

Beyond Waste Plan

2009 Update

Summary of the Washington State Hazardous Waste and Solid Waste Management Plan

Washington State Department of Ecology
Olympia, Washington

"Pollution is nothing but the resources we are not harvesting. We allow them to disperse because we've been ignorant of their value."
— R. Buckminster Fuller, 1895-1983

Washington State Solid Waste Advisory Committee

November 30, 2009

Ted Sturdevant, Director
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Dear Mr. Sturdevant:

The State Solid Waste Advisory Committee (SWAC) voted on September 15, 2009, to approve the 2009 Beyond Waste Plan Update.

The SWAC has been informed about and involved in the update process over the last year and agrees with the direction it has taken. The update preserves the overall vision to reduce waste and toxics. It maintains focus on the initiatives set forth in the original plan, while adapting for changes that have occurred over the last five years. This includes more focus on climate change, product stewardship and prevention of wastes.

At the September 2009 SWAC meeting, the committee agreed with finalizing and issuing the plan update. We voted, with no opposition, to approve the update in its substantial form, with the understanding that some final editing, including incorporation of comments from SWAC members, will occur before final publication this month.

The SWAC has become more convinced over the years that the Beyond Waste vision of eliminating wastes and toxics will lead toward increased economic, social and environmental vitality. We look forward to continuing our assistance with the plan's implementation over the next five years.

Sincerely,

Stephen C. Wamback, Chair
State Solid Waste Advisory Committee

slm

cc: Polly Zehm

Table of Contents

Introduction

This document is the 2009 update to the Beyond Waste Plan, Washington's statewide plan to reduce wastes and toxic substances. The Washington State Department of Ecology (Ecology) originally published the plan in November 2004. Together with related background papers, this plan comprises the updated state Hazardous Waste Management Plan and state Solid Waste Management Plan. This summary document contains all of the Beyond Waste Plan recommendations and milestones. The original background papers show the history behind the issues. (*www.ecy.wa.gov/beyondwaste/finalplan.html*)

A plan update is required every five years. The original Beyond Waste Plan covers the 30 years from 2005 to 2035, and is still relevant. This update does not make significant changes. It sets out the next five years of work (2010-2015) based on the progress made so far, and brings the plan current with emerging issues.

As with the original plan, the update process included public input. Numerous parties commented on the Beyond Waste Plan update documents, which Ecology greatly appreciates. Ecology carefully considered all of the comments, and made changes that significantly improved the draft update. A summary of major comment themes and how we addressed them is available at *www.ecy.wa.gov/biblio/0907025.html*.

Carrying out the recommendations contained in the plan will provide significant benefits to Washington's people, economy, and environment. We look forward to continuing the important collaboration started through this project. It will take the partnership efforts of all sectors of Washington's economy and society to move "Beyond Waste."

How to navigate through this document

Ecology designed this summary as an electronic document. It contains all the goals, recommendations, and milestones of the Beyond Waste Plan. As you read this summary, you will find electronic links to longer Background Papers on each section in this summary. The Background Papers from the original creation of the plan go into more detail than this document. We did not revise the historical documents as part of the plan update.

Visit Ecology's Web site for more detailed information on this project or to download this document at *www.ecy.wa.gov/beyondwaste*. If you do not have access to the Internet, please call 1-800-RECYCLE to request printed copies of this summary document or the Background Papers.

Background

Purpose

State law requires Ecology to develop and regularly update statewide hazardous waste and solid waste plans (Chapter 70.105 and 70.95 Revised Code of Washington [RCW]). Prior to 2004, Ecology's Hazardous Waste & Toxics Reduction Program and the Waste 2 Resources Program (formerly the Solid Waste & Financial Assistance Program) independently developed these state plans. In November 2004, the two programs jointly issued the Washington State Hazardous Waste Management Plan and Solid

Waste Management Plan. This plan is called the Beyond Waste Plan due to the vision that is the plan's focus. This document is a required five-year update of the 2004 plan.

The Beyond Waste Plan provides statewide guidance for reducing the use of toxic substances, decreasing waste generation, increasing recycling, and properly managing any wastes that remain. The vision statement (see box to the right) sums up the plan's direction.

Beyond Waste Vision

We can transition to a society where waste is viewed as inefficient, and where most wastes and toxic substances have been eliminated. This will contribute to economic, social and environmental vitality.

What does it mean to go "Beyond Waste"?

"Beyond Waste" means that we stop throwing things away without thinking about it. It means we strive to stop making and using products containing harmful materials and look for effective, safer alternatives. Beyond Waste also means placing greater emphasis on a healthy environment through closer examination of short-term activities that may bring about long-term unintended impacts.

The decisions and choices we make every day affect the air, water, food, and health of the environment and people now and for generations to come. Our children and grandchildren deserve to inherit a healthy and safe environment. We can move toward that goal by realizing that large quantities of wastes and commonplace toxic substances are dangerous and often unnecessary.

Why should we move "Beyond Waste"?

Over the years, Washington's government, businesses, and citizens put considerable effort into making positive changes in waste management practices. Yet problems remain. We still throw away millions of dollars worth of recyclables every year. Toxic substances remain prevalent in our environment as evidenced by mercury in fish, polychlorinated biphenyls (PCBs) in orcas, and the flame-retardant polybrominated diphenyl ether (PBDE) in human breast milk.

Beyond Waste can help improve our waste management system and help us solve other problems, including mitigating climate change and protecting Washington waters. Washington State's Climate Action Team (CAT) (*www.ecy.wa.gov/climatechange/2008CAT_overview.htm*) recommended adopting many of the Beyond Waste actions, especially as they relate to organics recycling, green building, environmentally preferable purchasing, and product stewardship.

CAT consultants determined that implementing Beyond Waste can significantly reduce climate-changing greenhouse gas emissions. Implementing the Beyond Waste Plan also will contribute greatly to protecting Washington waters, such as reducing toxics in Puget Sound. Waste that is improperly disposed, including products containing toxics, often contaminates storm water. We will help to keep our waters clean by minimizing toxics and properly managing our waste.

Many people mistakenly perceive that the existing waste management system works very well, so there is no need to fix what is not broken. This perception is generally founded on one (or more) of five misconceptions about the current hazardous waste management system, solid waste management system, or toxic materials in general. These misconceptions can foster a false impression that we are already doing everything needed to protect Washington's people and environment from hazardous materials, solid wastes, and hazardous wastes.

Some misconceptions about Washington's current waste management system

For a complete discussion of these misconceptions including examples, citations of statistics, and studies, please see *The Future of Waste and Toxins in Washington* at *www.ecy.wa.gov/biblio/0404015.html*.

Misconception #1

Existing laws and regulations provide adequate protection from toxic chemicals.

The existing regulatory system does reasonably well when it comes to managing certain toxic wastes from industrial facilities. Still, the current system releases many toxic chemicals into the environment through:

- Permitted discharges.
- Exclusions to regulations, such as the exemption for small quantity generators (SQGs).
- Non-point source pollution.
- Mismanagement of hazardous waste. When safe management fails, toxic chemicals get into our land, air, and water.
- Disposal of products containing toxic chemicals.

Misconception #2

If a product is on the shelf, it is safe.

When we purchase a product, most of us assume that it has been tested and declared safe for the intended purpose. However, consumers may not know that:

- Consumer goods contain unknown quantities of chemicals. Many of these chemicals have not been tested or approved by any regulatory authority for their effects on human health.
- Children and infants are at greater risk of harm from exposure because of their low body weights, high metabolism rates, and the tendency to put things in their mouths.
- The use of chemicals is proliferating, and there is no systematic assessment of their effect on human health and the environment.

Misconception #3

Landfills solve the waste problem.

As long as there is waste, landfills will provide an important service. New, state of the art landfills offer a vastly improved degree of environmental protection over earlier landfill designs and waste management practices. However, permanent disposal in landfills does not provide an adequate solution to our future resource and waste management problems because:

- Permanent disposal of potentially useful materials means our economy must rely on extracting increasing amounts of diminishing natural resources.
- Subsidies and hidden impacts distort the complete costs of landfilling. This reinforces the belief that it is cheaper to dispose of materials, rather than reclaim them.
- Breakdown of materials in landfills emits climate-changing greenhouse gases.

Misconception #4

Recycling solves the waste problem.

Like landfills, recycling provides an important service, yet is not the ultimate waste solution. Current recycling programs have shown progress in collecting and sorting materials but do not successfully address long-range problems of waste accumulation and resource depletion. This is because:

- Product design usually does not take recycling into account, so it can be difficult and expensive to recover and reprocess materials.
- Virgin material subsidies and external costs not accounted for in our disposal practices put recyclable materials at an economic disadvantage compared to virgin materials.
- Many companies that call themselves recyclers actually are waste traders. They export materials to other venues for landfilling or recycling under hazardous environmental or working conditions.
- Recycling is a vital component of diverting material from disposal facilities and reducing the demand for virgin materials. But the current system is not wholly effective.

Misconception #5

Eliminating waste and toxics will be bad for the economy.

Waste results from poor product design, failure to use resources efficiently, and subsidized markets that encourage waste. Waste is a hidden cost that many just ignore. Creating waste may be the cheapest course of action in the short term, but in the long term it prevents our society from building a lasting, sustainable economy. Waste is ultimately expensive because:

- It adds no value to the product.
- It is often costly to manage and dispose of.
- Improperly managed waste can cause environmental contamination, which is extremely expensive to clean up.
- Focusing on closed-loop recycling, environmentally preferred products, green chemistry, and safer chemical alternatives presents a tremendous opportunity to add value to our existing economic base and create new viable markets.

Now that we have reviewed the misconceptions, let's look at the benefits of moving to Beyond Waste. These benefits are critical to understanding why it is important to work to eliminate waste.

Some benefits of moving "Beyond Waste"

Benefit

Beyond Waste saves money for all of us – citizens, local government and business.

- Citizens can spend less money on garbage bills and consumer goods that we don't really need.
- Local governments can spend limited resources more cost-effectively on recycling or composting waste than burying waste in a landfill.
- Businesses can spend less money on solid and hazardous waste disposal, reduce worker exposure to hazardous chemicals (which lowers training and insurance costs), and reduce risk for toxic releases to the environment (which lowers reporting, cleanup, and insurance costs).

Benefit

Beyond Waste creates additional and more desirable jobs.

- Studies show recycling and composting create more jobs than landfill disposal or incineration. These "green" jobs are often family-wage jobs.
- Many people like to work for "green" companies.
- Business experts believe green jobs are an important area of future job growth.

Benefit

Beyond Waste protects the environment.

- Practices such as composting, building green, and reusing waste as feedstock instead of mining new materials reduce energy use and greenhouse gas emissions.
- These sorts of practices also minimize toxic releases to the environment through air, stormwater runoff, and spills.
- They lessen the need for mining, logging, and manufacturing new products, all of which can cause significant environmental problems.

Benefit

Beyond Waste protects our health.

- Reducing toxic exposures at home and at work can prevent health problems.
- Limiting greenhouse gas production can protect our health. Climate change likely will cause many negative health impacts, including the spread of hot weather diseases.
- Reducing pollutants in the environment lessens our exposure to toxics that cause health problems.

Benefit

Beyond Waste leads to increased profitability of businesses, especially in the long run.

- Businesses that reduce waste and hazardous substance usually earn higher profits than companies that do not.
- Companies that want to compete internationally often need to reduce toxic substances to comply with other nations' laws and regulations.
- Employee turnover is often lower for companies with strong environmental policies. This leads to reduced employee training and related costs.

Beyond Waste – An Integrated Approach

Scope

In the original Beyond Waste Plan, Ecology identified five initiatives, or areas of focus, to begin pursuing the Beyond Waste vision. With the plan update, we continue to work on these five initiatives. The plan update will guide state and local governments, the private sector, and the public in making decisions that will have major effects on waste management and waste generation for many years to come.

Ecology talked with businesses, local governments, citizens, environmental organizations, and others to develop the original Beyond Waste Plan. As we updated the plan, we received additional input from stakeholders. Ecology is committed to working together on the Beyond Waste Plan with people and organizations interested in waste, environmental protection, economic vitality, and health.

During the past five years, focus has increased on climate change, the health of Puget Sound and other Washington waters, and the need to reduce toxic threats. The Beyond Waste update increases the emphasis on these three vital areas. The update builds on the relationship of waste and other environmental issues.

This document provides summaries of the five initiatives, which focus on reducing wastes and toxic substances in Washington. Successful implementation of these five initiatives will:

- Significantly reduce most wastes and the use of toxic substances in Washington's industries.
- Significantly reduce small-volume hazardous wastes from businesses and households.
- Expand the recycling system in Washington for organic wastes such as food wastes, yard waste, and crop residues.
- Reduce the negative impacts from the design, construction, and operation of buildings.
- Develop a system to measure progress in achieving our goals.

In addition to these five initiatives (pages 9 through 39), this update addresses issues that affect today's solid waste and hazardous waste management system.

Moving Beyond Waste will take many years. In the meantime, we must maintain or improve our current waste-handling system. That's why the Beyond Waste Plan also includes recommendations and milestones on current hazardous waste and solid waste system issues (pages 39 through 58).

Each initiative or current issue includes several recommendations and milestones. Many recommendations and some milestones did not change from the original 2004 Plan. We updated some and added others to reflect progress and new directions.

Ecology chose the recommendations to take us to our 30-year goals. The milestones serve as shorter, measurable steps. While a few recommendations and milestones provide direction solely for Ecology, most also provide guidance to other governments, organizations, and the private sector. And some can only be accomplished by entities other than Ecology. Therefore, we wrote the recommendations and milestones broadly to apply to many audiences.

These recommendations and the Beyond Waste Plan in general strive to provide statewide guidance for reducing the use of toxic substances, decreasing waste generation, recycling more materials, and properly managing any wastes that remain. This will not be easy. Some actions will require legislative authorization or new funding sources. Some will require new partnerships between the private sector, government, and other organizations. Some actions will begin sooner than others will. Some will produce results quickly, while others will take longer to achieve.

Partnerships are the key to achieving the goals of Beyond Waste. Governments at all levels, the private and non-profit sectors, academia, and communities will need to work together to implement the plan's recommendations.

The transition to a society that focuses on reducing the use of toxic substances and decreasing waste generation will involve change in many areas. The Beyond Waste vision states that the transition to Beyond Waste "… will contribute to economic, social, and environmental vitality." Ecology believes the actions outlined in the Beyond Waste Plan will strengthen Washington's economy. An economy that views wastes as inefficient and minimizes the use of toxic substances can only prosper as these values continue to gain momentum and influence the marketplace.

Beyond Waste proposes to take bold steps that may pose challenges in the short term, but will be economically sustainable for the long term. Here are the key principles and strategies that are the basis for making those changes.

Key Principles and Strategies

Some key principles and strategies are common to all five initiatives (and current issues). These are fundamental for the success of the Beyond Waste Plan.

- Incentives, especially financial ones, are key tools in implementing Beyond Waste.
- Achieving the Beyond Waste vision will require a different way of doing business. While regulations are needed, they are not necessarily the best or the only way to achieve Beyond Waste.
- Increase focus on waste and toxics prevention. Eliminate waste and toxic substances wherever possible, rather than just managing them after use.
- Choose activities with the goal of creating the least damaging ecological footprint possible.
- Change the mindset, as individuals and as a society, that waste is "normal" or "necessary."
- Raise public awareness about toxic materials in everyday products and their effects on human health and the environment.
- Work with manufacturers to take responsibility for end-of-life management of their products. Work with product designers and manufacturers to encourage the development of product lines that conserve energy and water and eliminate unnecessary materials and waste. In addition, work with designers and manufacturers to make products that are least toxic or non-toxic, reusable where possible, and readily recyclable.
- Encourage people to buy and use environmentally preferable products and services.
- Use and promote third-party certification systems to verify preferable products and services.
- Create partnerships among government, business, organizations, and citizen groups from every sector across the state. They are crucial to decision-making and achieving the Beyond Waste goals.
- Use actions recommended under each initiative to advance the goals of the other initiatives whenever possible.
- Measure progress regularly in each initiative to determine course corrections needed to meet the goals.
- Use government leadership as an important lever to make progress toward the goals, especially through its purchasing power and through model and demonstration projects.
- Work to build on and increase existing momentum toward waste reduction and toxic substance elimination.
- Conduct pilot projects on recommendations to test the feasibility of and gain support for full-scale implementation.
- Whenever possible, remove barriers that stand in the way of reducing wastes and toxics.
- Build on current Environmental Justice efforts to ensure that risks we cannot eliminate are borne equitably by all sectors of our society.

Progress on the 2004 Beyond Waste Plan

The initiatives, recommendations, and milestones in this document are steps toward the Beyond Waste vision. Ecology will continue to evaluate progress on the Beyond Waste recommendations and milestones to determine if we need to adjust or correct them. We are committed to updating the Beyond Waste Plan every five years so it remains a current, statewide guide for collaborative actions to reduce wastes and the use of toxic substances.

The first five years of the Beyond Waste Plan saw much progress. Of the original 74 milestones, 25 were accomplished, and some progress was made on 38 others. Only 11 had little to no progress.

Progress on the 2004 Beyond Waste Plan Milestones

Beyond Waste Plan Section	Number of Milestones	Achieved to Date	Significant or Some Progress	Little or No Progress
Industries Initiative	14	4	10	-
Small Volume Hazardous Materials and Waste Initiative	10	2	6	2
Organics Initiative	10	4	6	-
Green Building Initiative	11	7	2	2
Measuring Progress Initiative	4	4	-	-
Hazardous Waste Issues	10	2	6	2
Solid Waste Issues	15	2	8	5
Total	**74**	**25**	**38**	**11**

Some highlights include:

- A manufacturer-funded program to recycle electronics is in place for computers, TVs, monitors, and laptops.
- The Legislature passed a law requiring all state-funded building projects to build green.
- Government is leading the way with composting programs at a number of locations, including all Ecology offices.
- A Chemical Action Plan for PBDE flame-retardants was written and legislation was passed. Implementation is in process.
- Implementing the Mercury Chemical Action Plan kept more than 10,000 pounds of mercury out of the environment.
- Businesses reduced by 50 percent the amount of recurrent hazardous waste they generate.
- More local governments are adopting the Beyond Waste vision in their plans and programs.
- The Beyond Waste Plan is recognized as a key strategy for combating climate change.

In the first five years, we have taken a new and challenging concept, Beyond Waste, and made it commonly known among people in the waste industry. Now, because of the Climate Action Team's recommendations, people outside of the waste industry have accepted it as well. In the next five years, we will continue to work on making Beyond Waste a better understood and accepted concept, as we progress with the recommendations and milestones laid out in the plan update. For more information on progress or to view the annual Beyond Waste Progress Report of 16 overarching indicators, go to *www.ecy.wa.gov/beyondwaste/bwprog_front.html*.

The Five Initiatives

The actions recommended in each of these five initiatives are intended to complement and support each other. The following pages summarize the detail in each of the five initiatives, the proposed recommendations for action, and the five-year milestones.

Initiative #1

Moving Toward Beyond Waste with Industries

You can access a detailed Background Paper from the original 2004 plan on the Industries Initiative, including all appropriate citations, at *www.ecy.wa.gov/biblio/0407025.html*.

Introduction to Toxics

(This section also applies to the Small Volume Hazardous Materials and Waste initiative.)

Chemicals are everywhere in the environment. Some chemicals, such as antibiotics, greatly increase the quality of our lives. Unfortunately, there are also chemicals in the environment and our bodies that we now realize are harming us. We use federal and state laws to regulate toxic chemicals, including toxic wastes. It is becoming clear, however, that these laws do not do enough to protect people's health and the environment.

> Avoiding the use of toxic substances is the smartest, cheapest, and healthiest approach.
>
> *From the Department of Ecology's Reducing Toxic Threats Agency Priority*

Waste from toxic chemicals is hazardous. In Washington, this waste is both regulated and unregulated, depending on the source. The state strictly regulates business and government entities that generate medium to large quantities of hazardous waste (more than 220 pounds a month). While small quantities of hazardous waste from businesses (less than 220 pounds a month) are mostly unregulated, the state can cite businesses for polluting the environment due to mismanagement. Households, also unregulated, generate small quantities of hazardous waste, such as leftover cleaning supplies, pesticides, paints, and varnish.

There are roughly 4,000 regulated generators of hazardous waste in Washington. The Industrial Waste Initiative addresses strategies to work with this group. We estimate there are 65,000 small quantity generators (SQGs) of business hazardous wastes. These SQGs and the 2.5 million households that create household hazardous waste (HHW) are the subjects of the Small-Volume Hazardous Materials and Wastes Initiative (see page 17).

We can and should reduce chemicals and wastes from all these entities. We need to protect our environment and our health by reducing the use of the most toxic chemicals and using safer alternatives. The best way to accomplish this is to move toward a systematic, proactive approach and away from a chemical-by-chemical approach.

Since the adoption of the 2004 Beyond Waste Plan, there is much more awareness and concern regarding toxics in products, especially in children's products. People are concerned that these toxics are now found in household dust and build up in food, animals, and people. The nation and states are adopting laws to minimize toxics in children's products. National organizations and individual states are also working on toxics in other products, including cosmetics, electronics, and furniture. The European Union's adoption of REACH[1] legislation shows the issue is not going away.

[1] Registration, Evaluation, Authorisation, and Restriction of Chemicals

Introduction to Industries

The goal of the Industries Initiative is to maintain or strengthen the economic vitality of Washington State's industries at the same time we reduce wastes and the use of toxic materials, and increase the use of recyclable materials. This requires cooperation and partnerships between Ecology and industry.

To date, business and government have made great strides together in reducing waste generation and improving waste management. However, there are still many opportunities to foster business competitiveness and protect human health and the environment.

Redesigning processes and products will reduce costs for industry, lessen the need for government regulation, improve conditions for workers, and improve the environment. Use of more efficient production methods for goods and services will position Washington businesses as leaders. This will increase the ability of Washington's businesses to sell to other national and international firms that already use such practices and require their suppliers to do the same. Ultimately, this will enhance the state's economy.

For the purposes of this initiative, the term "industries" includes the sectors of Washington's economy (public agencies as well as private companies) that produce goods and services for businesses and citizens. Industrial activity generates a significant portion of the solid waste and most of the hazardous waste in Washington. Managing these wastes costs Washington industries millions of dollars each year. If this initiative is successful, Washington's industries will greatly reduce these costs, making them more competitive.

According to the Worldwatch Institute, the industrial contribution to the overall waste stream is quite large. For every garbage can of waste someone puts on the curb, the manufacturing process upstream made 70 garbage cans of waste. The vast majority of that manufacturing waste is solid waste; however some of it is hazardous waste as well.

This initiative also focuses on reducing and even eliminating the use of hazardous substances, such as toxic chemicals, in Washington's industrial processes. The risk from toxic chemicals begins when they are first used, not when they become a waste. Hazardous wastes are difficult to recycle. In addition, hazardous substances used in manufacturing often result in hazardous substances in the products themselves. These products carry with them an environmental and sometimes public health risk before, during, and after their use.

We selected this initiative as one of the keys to Beyond Waste for three main reasons:

1. Significantly reducing wastes and hazardous substances from Washington industries should, over time, increase competitiveness with out-of-state businesses and strengthen the state economy.
2. Industry generates most toxic wastes in the course of providing consumer products and services. These wastes are costly to manage and pose high risks to human health and the environment.
3. Many Washington industries already have working relationships with Ecology staff, especially through the pollution prevention (P2) planning program. These well-established relationships will be springboards for working together to reduce waste and increase competitiveness for businesses.

Today's Reality

Washington's population is projected to grow dramatically to 7.8 million by 2025. Hazardous wastes, toxic releases from manufacturing processes, and product consumption also will increase. This will increase the potential for human exposure to toxic chemicals and environmental degradation.

At the same time, most companies will look for ways to increase their market share and reduce costs to stay competitive in an increasingly global marketplace. Washington's economy suffered after September 11, 2001, but rebounded a few years later. Washington's economy, along with the rest of world, took another big downward turn in 2008. As of this writing, it has yet to recover. This may seem like a tough time to invest in sustainability. However, one study shows that "sustainability focused" companies outperformed industry peers with 15 percent higher stock prices over six months. The firm A.T. Kearney looked at 99 companies to determine this trend.

Washington's economy is in the midst of change. Manufacturing jobs are declining. As the population grows, jobs in service industries will increase. These changes affect the type of wastes generated and hazardous substances used. Employment projections predict that some traditional industries, such as aerospace and aluminum production, will continue to decline. Other sectors are expected to increase, such as chemical manufacturing, petroleum refining, government, services, electrical/electronic equipment production, wholesale trade, and industrial machinery/equipment. Washington's green businesses also are increasing, such as biofuels production from organic materials.

Goals: What Washington will look like in 30 years (by 2035)

The following are 30-year goals for the Industries Initiative:

Safe products and services.

We have eliminated most threats to human health and the environment due to hazardous materials. The design of products and services produced in Washington minimizes hazards throughout their life cycles. Nearly all products are less toxic. Consumer demand for effective, environmentally friendly products is widespread. We handle products formulated with hazardous materials as carefully as hazardous waste.

Economic vitality.

Washington businesses and other sectors thrive in the domestic and global marketplace as they systematically eliminate hazardous materials from products and services, replacing them with safer materials made locally. Consumer confidence has increased, risks and liabilities have decreased, and costs for managing wastes are reduced. The design of Washington businesses, and the products and services they provide, maximizes pollution prevention and sustainability principles.

Sustainable materials management.

Consumers demand sustainable products and services that Washington businesses design and provide. Protecting human health and the environment is paramount. There is a well-operating infrastructure for managing hazardous materials safely and responsibly.

Recommended Actions and Five-Year Milestones

The recommendations provide detailed activities to help achieve the 30-year goals of the Industries initiative. The milestones will measure progress over the next five years.

Recommendation IND 1 — Modify the Pollution Prevention Planning program to dovetail with the Beyond Waste vision.

Modify the Pollution Prevention (P2) planning program activities and program direction to mesh more closely with the Beyond Waste vision, since it is a key tool for implementing the Industries Initiative. This recommendation ties in directly with recommendations IND 12 and HW 1, 2, 3 and 4. Some possible ways to do this are:

- Make P2 plans more efficient.
- Tie in P2 data tracking with Beyond Waste data tracking efforts. Use the information gathered with the P2 plans to help determine sector campaigns and drive policy decisions.
- Encourage earlier P2 planning that designs in waste reduction and recycling and designs out the use of toxic substances in products and processes. Also, broaden the scope of the plans to be more comprehensive.
- Work to ensure plan implementation.
- Due to the recommendations of the Toxics Reduction Advisory Committee, the short-term focus will be on getting the P2 Planners to include hazardous substance use in their P2 plans.

Milestone IND A: Most P2 plans comprehensively address hazardous substance use.

Recommendation IND 2 — Expand information on Ecology's Web site.

Encourage all hazardous waste generators in Washington to reduce toxics contained in their products, as well as wastes generated in making their products, and to manage the remaining wastes properly. The Hazardous Waste and Toxics Reduction (HWTR) Program will expand its Web site to include more details on specific waste streams and processes, with an emphasis on best management practices. Highlight multi-media approaches, as well as sector campaigns and safer alternatives.

Milestone IND B: The Hazardous Waste and Toxics Reduction program Web site includes more information about best management practices, including alternatives for key wastes and substances.

Recommendation IND 3 — Put in place several Beyond Waste incentives.

Work with affected parties to recommend financial and regulatory incentives and approaches to encourage hazardous waste generators to adopt Beyond Waste behaviors. Some possible incentives and approaches include:

- **Performance results:** Reduce "regulatory burdens" for businesses that adopt environmentally beneficial results that are beyond current requirements.
- **Green technology:** Accelerate adoption of environmentally beneficial technology, primarily in the public sector.
- **Product stewardship:** Work with producers and manufacturers to take responsibility for minimizing their product's environmental effects.
- **Product certification/labeling:** Certify the environmental performance of products by an independent third party.
- **Recognition programs:** Recognize businesses that volunteer and meet certain waste-reduction criteria (and use the recognition as a marketing incentive).
- **Low-interest loans or other financing:** Help fund technology for pollution prevention or other environmental improvement at businesses, such as redesigning products to minimize the use of hazardous substances.

- **Eliminate subsidies:** Remove current payments that directly or indirectly encourage use of toxic substances and virgin materials.
- **Changes to hazardous waste fees:** Restructure the planning fee and the hazardous substances fee to provide incentives for reducing hazardous wastes and substances. This may include higher charges for more toxic chemicals.
- **Phase out highly toxic substances using memoranda of agreement:** Develop a memorandum of agreement (MOA) between Ecology and affected parties to phase out certain highly toxic substances.
- **Assistance in redesigning an organization's product or process:** Help companies in redesign efforts that benefit the company and the environment.

We studied many incentives over the last five years, especially recognition programs and financial incentives. However, we implemented only a few incentives for select products, such as product stewardship for electronics, and an MOA with the state dentists association on properly disposing of fillings containing mercury. Ecology would like to provide more incentives to businesses and others. We will work with the Legislature and others to create more incentives.

Milestone IND C: Several incentives are in place to help implement Beyond Waste, including a possible low-interest loan program or possible changes to hazardous waste fees.

Recommendation IND 4 — Encourage new businesses to adopt sustainable practices.

In cooperation with the Washington State Department of Commerce (Commerce), Ecology will work with new businesses locating in the state to encourage them to adopt pollution prevention and sustainable practices into their facility and product design. This could include minimizing the use of toxic substances, curbing toxic and greenhouse gas emissions and stormwater runoff, and using less water and energy. This could help them avoid certain regulatory permits.

Milestone IND D: Most of the major new businesses moving to Washington incorporate more sustainable practices.

Recommendation IND 5 — Encourage waste handlers (including businesses and other entities that generate waste) to become materials brokers.

Provide technical assistance to waste handling firms and others so they can become materials brokers and transcend the current treatment, storage, and disposal model to support greater material reuse and recycling. The goal is for these "second-generation" treatment facilities to reclaim and recover waste for beneficial value and to stock reusable materials for redistribution and reuse. More research is needed on better alternatives and beneficial reuse of hazardous waste and materials to achieve a closed loop system using wastes as resources.

Several organizations have developed to encourage these efforts, such as by-product synergy, and Ecology has provided them with funding and organization support. As this new closed-loop system evolves, Ecology will need to examine its regulatory controls and permitting authority to ensure proper management of hazardous materials and substances.

Milestone IND E: Hazardous waste handlers including businesses and other entities in Washington have taken noticeable steps toward becoming brokers of materials.

Recommendation IND 6 — Support EPA's "Beyond Waste-type" efforts.

Support EPA's efforts to promote sustainable materials management and a closed-loop recycling system including the following national programs:

- The Beyond Resource Conservation and Recovery Act (RCRA) or its equivalent plan.
- Resource Conservation Challenge.
- Performance Track.
- Waste Minimization Partnership Program.
- Innovation in permitting and compliance assistance.
- Reforming the Toxic Substance Control Act (TSCA).

Washington cannot achieve the Beyond Waste vision without help on the national level. There are too many national laws such as RCRA and TSCA that directly affect the state's ability to implement Beyond Waste. EPA is a critical partner in helping us implement this plan. Changes to national legislation are essential to Washington State's success.

Milestone IND F: EPA and Ecology work together to implement Beyond Waste.

Recommendation IND 7 — Promote sustainability in product development.

Research, especially exploring what some European nations and companies have attempted and achieved, is an essential first step. It is also important to work with key organizations and institutions to promote sustainability in product development. Ecology will assist such organizations and institutions with research into selected existing and proposed alternative products for their toxicity, recyclability, reusability, water consumption, energy use, and waste resulting from manufacturing and use. Using this research, Ecology will develop and provide technical assistance to businesses and other interested parties on sustainable product development.

In addition, Ecology will work with others to explore the idea of establishing a research and educational institute, in conjunction with the state's university system, to address sustainable product design and manufacturing. The goal is to have products that are useful, long-lasting, toxic free, and easily recyclable.

Milestone IND G: A strategy has been developed and agreed to for moving forward and at least one project is underway to promote sustainable product design.

Recommendation IND 8 — Eliminate or minimize groups of the most toxic chemicals as part of Ecology's Reducing Toxic Threats work. (Same as MRW 1)

Prioritize and address chemicals that pose significant threats to vulnerable populations and the environment or for which there are safer alternatives. To assist with these efforts, manufacturers disclose the composition of their products. Build on momentum for a more comprehensive approach to reducing toxic chemicals, instead of focusing on one chemical or a small handful of chemicals at a time. Work with manufacturers, state and local governments, the public, and stormwater managers on this more comprehensive approach.

- Support research on safer alternatives. Encourage public/private research and development capacity in Washington.
- Encourage the development of green chemistry curricula in higher education institutions.
- As part of this effort, regulatory and legislative options will be considered, including but not limited to:
  - Reforming national law such as the Toxic Substances Control Act (TSCA).
  - Regional initiatives such as the Interstate Clearinghouse of Chemicals.

- A Washington State "chemical policy" or "green chemistry" law.
- Strengthening pollution prevention laws and regulations.
- A comprehensive strategy to ensure careful management and disposal of household products that contain toxins.

Milestone IND H: Multiple states have agreed on a chemical assessment protocol to identify safer alternatives to priority chemicals. Safer alternatives are identified for 10 priority chemicals. (Same as MRW A)

Recommendation IND 9 — Use the sector approach as the framework to help implement the agency's initiatives.

Organize educational sector projects and technical assistance campaigns to properly manage or minimize certain wastes and chemicals. Campaigns may be organized around sectors of the economy (including government), industrial processes, or those that produce a key waste stream or use a certain chemical.

Ecology's agency priorities (mitigating climate change, protecting Washington waters, and reducing toxic threats) need to be the key criteria for future sectors projects. (It is the intention that any sector work also will help move other Beyond Waste initiatives forward.)

Sectors help us effectively target our work and implement the agency's priorities that reflect major risks to health and the environment. Implementing Beyond Waste will involve work with other programs on these efforts.

- Determine what sector projects to conduct.
- Research and prepare materials for the project.
- Run the campaign, working closely with the appropriate associations and businesses.

Milestone IND I: Government is leading by example, with significantly less waste generation and less use of toxic substances at the local, state, and federal levels.

Milestone IND J: At least two successful sector campaigns that reduced greenhouse gases, toxics in products, and/or toxic releases going into Puget Sound and other Washington waters are complete.

Recommendation IND 10: — Support the creation of green jobs and a green economy while emphasizing ways to reduce the use of toxic chemicals and generation of wastes.

One possible way to do this is with product stewardship programs, as illustrated by the number of jobs created with British Columbia's product stewardship programs. Reducing the use of toxic chemicals in products to facilitate product stewardship eliminates the need to address worker exposure when designing producer-take-back recycling programs.

Milestone IND K: The Governor's strategy on creating green jobs and a green economy for Washington State includes ways to minimize toxics and wastes.

Recommendation IND 11 — Help minimize the release of toxics into stormwater.

Toxics in stormwater is one of the major sources of water pollution. We need an effective strategy to tackle this problem, including clear roles for the different programs in Ecology. As part of this effort, develop a coordinated strategy among the Hazardous Waste, Waste 2 Resources, and Water Quality programs in Ecology, defining roles and responsibilities for managing and minimizing toxics in stormwater.

Milestone IND L: An effective strategy exists which minimizes toxics in stormwater. Ecology's Hazardous Waste, Waste 2 Resources, and Water Quality programs coordinate efforts for managing toxic chemicals in stormwater.

Recommendation IND 12 — Implement the Toxic Reduction Advisory Committee (TRAC) recommendations.

The TRAC recommendations focus on improving the P2 program and significantly reducing the use of toxic substances by industries in Washington. Click here to link to the legislatively mandated report. www.ecy.wa.gov/programs/hwtr/TRAC/index.html

- Start by implementing the recommendations that are allowed under existing laws with existing resources. These primarily address research, technical assistance, and reporting the use of hazardous substances.
- Work with state lawmakers to adopt needed legislative changes, and then modify the regulations.
- If resources permit, implement the more resource-intensive recommendations.

Milestone IND M: The majority of the TRAC recommendations are implemented.

Recommendation IND 13 — Support product stewardship legislation (including framework and/or individual product legislation) and Environmentally Preferable Purchasing (EPP) legislation as recommended by the Governor's Climate Action Team.

Product stewardship and EPP legislation encourage a more closed-loop recycling system, especially for products that are more difficult to recycle. Legislation will keep products and toxics out of the waste stream and storm-water. Visit the Climate Action Team homepage at *www.ecy.wa.gov/climatechange/2008CAT_overview.htm*.

Milestone IND N: A statewide product stewardship framework is in place and three or more new products are included in that framework. Alternatively, comparable product stewardship legislation is in place for individual products.

Milestone IND O: Legislation is modified to support more environmentally preferable purchasing, a program to track EPP purchases is in place, and sales of EPP goods and services are increasing. (Same as Milestone MRW I)

Recommendation IND 14 — Educate the public and businesses on prevention, proper use, storage, and disposal of hazardous products and wastes. Encourage safer alternatives to minimize toxic threats, especially to vulnerable populations. (Same as MRW 11)

Products are a significant source for toxic chemicals getting into the environment generally and Puget Sound specifically. Education is needed to reduce these risks.

- Work toward a statewide effort to maximize the effectiveness of education efforts, with consistent messages across jurisdictions.
- Provide the public with information on choosing the safest product to meet their needs, and to handle it properly. This could include product composition and appropriate third-party certification systems. This will help the public drive demand for EPP products.

Milestone IND P: Statewide education to minimize toxic threats is in place and complements local and regional efforts. (Same as MRW M)

Milestone IND Q: Fewer toxic products are purchased, misused, and disposed of improperly. The public is more aware of which chemicals are in products. (Same as MRW N)

Implementation strategies for this initiative can be found on page 59.

Initiative #2

Reducing Small-Volume Hazardous Materials and Wastes

You can access a detailed Background Paper from the original 2004 plan on the Small-Volume Hazardous Materials Initiative, including all appropriate citations, at *www.ecy.wa.gov/biblio/0407026.html*. This initiative is also referred to as the moderate risk waste or MRW initiative.

Introduction to Toxics (see page 9)

Introduction to Small-Volume Hazardous Materials and Waste

The goal of this initiative is to eliminate the risks associated with products containing hazardous substances commonly used in households and in relatively small quantities by businesses, along with any associated hazardous wastes.

Washington State classifies this type of hazardous waste as moderate-risk waste (MRW). However, this term can be misleading. These wastes are not necessarily moderate in their risks to human health and the environment, nor moderate in quantity, when all household and business sources are combined. Also, the distinction between a hazardous waste and a hazardous product or substance is artificial, since both carry potential risks. We use the term moderate-risk waste, or MRW, because it is familiar to many. Throughout this initiative, the term refers to wastes, as well as products or substances before they actually become "wastes."

Reducing risks from MRW involves more than ensuring safe handling and disposal. It also means increasing MRW recycling and reuse, and most importantly, preventing hazards in the first place by eliminating or reducing the use of hazardous substances in products. Reducing the toxicity associated with products and services, and managing products at the end of their life, require collaborative solutions involving industry, manufacturers, retailers, governments, and consumers.

We selected this initiative as one of the keys to Beyond Waste for three main reasons:

1. MRW affects everyone. Small-volume hazardous materials and wastes are everywhere. People encounter them daily. Chronic and acute exposure to hazardous chemicals in our homes and businesses can be a significant health risk. This can prove very costly to businesses and society due to costs of health care, environmental degradation, insurance, and liability.
2. The current MRW management system is not affordable for the future and cannot sustain itself over the long run. The current system relies on taxes and fees. Most of these monies pay for special programs to collect, treat, and dispose of MRW to keep it out of municipal solid waste landfills and incinerators, and avert illegal disposal. Yet these programs capture only a small percentage of all MRW. It is difficult to foresee how the public sector can afford to provide the level of service for a truly effective system. The future needs to include safer product alternatives, product stewardship, waste reduction, recycling, and convenient collection/drop-off opportunities that do not rely primarily on public systems and finances.
3. Great strides are possible. Many opportunities exist to reduce and eliminate the risks associated with MRW. Consumer demand is building for less harmful products with safer ingredients, better product labeling, and more reuse and recycling. Several regional and national initiatives are under way and the Beyond Waste Plan can help them advance.

Today's Reality

The existing regulatory system for moderate-risk wastes focuses on waste management. The state's Dangerous Waste Regulations (Chapter 173-303 WAC, *http://apps.leg.wa.gov/wac/default.aspx?cite=173-303*) exclude MRW, either conditionally or categorically. The regulations give little attention to hazardous products and substances themselves, unless very large quantities are used.

Household hazardous waste (HHW) is any waste created by discarding a "hazardous household substance." As state statute defines hazardous household substances, they are interchangeable with the term "products" as used in this initiative. The table below lists the broad categories of hazardous household substances, or products.

Hazardous Household Substance Types*

Type	Example
Repair and Remodeling	Adhesives, oil-based paint, thinner, epoxy, stripper
Cleaning Agents	Oven, deck and toilet cleaners; degreasers
Pesticides	Wood preservatives, mole killer, herbicides, pesticides
Auto, Boat and Equipment Maintenance	Batteries, paint, gasoline, oil, antifreeze, solvents
Hobby and Recreation	Photo & pool chemicals, glaze, paint, white gas
Miscellaneous	Ammunitions, fireworks, asbestos

* *Local jurisdictions may include additional hazardous substances based on local hazardous waste planning processes.*

The remainder of the moderate-risk waste stream comes from non-household generators of small quantities of hazardous waste. These businesses and other non-household sources are commonly referred to as conditionally exempt small quantity generators (CESQGs). Ecology has estimated there are about 65,000 CESQGs in Washington. Each of these businesses generates no more than 220 pounds per month or per batch of hazardous waste. CESQG wastes include many of the same substances as HHW, but also may include commercial-type wastes, such as copier and photo processing wastes; high-strength cleaning chemicals; and strong oxidizers, acids, and bases.

Ecology estimates that the current MRW collection system is managing only a small portion of HHW and CESQG wastes. In 2007, the system collected 32.2 million pounds of MRW (HHW and CESQG, combined). Of that, 24.6 million pounds were HHW. Ecology estimates this represents only 13 percent of the 186 million pounds of all HHW generated in 2007. The remaining 87 percent may have entered landfills, solid waste combustors, sanitary sewers, stormwater systems, or been dumped on the ground.

The CESQG waste stream is not as well quantified as HHW, but experts estimate the amount of CESQG waste generated in 2007 was probably at least equal to the amount of HHW generated. If it was equal to the HHW waste stream (186 million pounds), then the 7.6 million pounds of CESQG waste collected in 2007 represented only four percent of the total CESQG waste generated. The destination of the remaining 96 percent of the CESQG waste generated is unknown, though some goes to privately operated transfer, storage, and disposal facilities.

There is an obvious need for a better waste management system that captures more MRW. The existing collection system cannot possibly manage all MRW with the current level of resources. Local and state resources already find it challenging to fund the current level of HHW services. For the CESQG waste stream, most programs provide services for a fee and so some additional capacity might be available to serve this client base by the generation of fee-based revenues.

Although MRW collection is inadequate compared to the quantities and risks of MRW, it does divert hazardous substances from the municipal waste streams and provide numerous benefits. MRW collection:

- Provides an opportunity for waste reduction education.
- Allows for the recovery of hazardous substances as resources.
- Reduces the toxicity of solid waste landfills and wastewater systems.
- Helps the public avoid improper disposal practices.
- Protects waste-processing equipment and handlers from exposure to hazardous materials.

All of this reduces the human and environmental health risks associated with MRW.

Goals: What Washington will look like in 30 years (by 2035)

The following are 30-year goals for the Small-Volume Hazardous Materials Initiative:

Safe products and services.

Minimizing chemical hazards associated with the life cycles of products and services has eliminated most threats to human health and the environment. Less toxic products and services are available to meet consumer demand, and highly hazardous products are generally unavailable.

Sustainable materials management.

Human health and the environment are well protected. Reuse and recycling are optimized for any remaining hazardous materials still in use. Producers, retailers, government, consumers, the solid waste industry, and other sectors have collaboratively developed a system for managing hazardous materials safely and responsibly.

Economic vitality.

Washington's economic sectors thrive in the domestic and global marketplace as hazardous materials are systematically eliminated from products and services. New programs and technologies are developed to manage the remaining hazardous materials more effectively and efficiently. There is increased consumer confidence, decreased risks and liabilities, and reduced costs for managing MRW.

Recommended Actions and Five-Year Milestones

The following recommendations provide detailed activities to help achieve the 30-year goals of the Small-Volume Hazardous Materials Initiative. The milestones will measure progress over the next five years.

Recommendation MRW 1 — Eliminate or minimize groups of the most toxic chemicals as part of the agency's Reducing Toxic Threats work. (Same as IND 8)

Prioritize and address those chemicals that pose significant threats to vulnerable populations and the environment or for which safer alternatives are identified. To assist with these efforts, manufacturers disclose the composition of their products. Build on momentum for a more comprehensive approach to reducing toxic chemicals, instead of focusing on one chemical or a small handful of chemicals at a time. Work with manufacturers, businesses, state and local governments, the public, and stormwater managers on this more comprehensive approach.

- Support research on safer alternatives. Encourage public/private research and development capacity in Washington.
- Encourage the development of green chemistry curricula in higher education institutions.

- As part of this effort, regulatory and legislative options will be considered, including but not limited to:
  - Reforming national law such as the Toxic Substances Control Act (TSCA).
  - Regional initiatives such as the Interstate Clearinghouse of Chemicals.
  - A Washington State "chemical policy" or "green chemistry" law.
  - Strengthening pollution prevention laws and regulations.
  - A comprehensive strategy to ensure people carefully manage and dispose of household products that contain toxins.

Milestone MRW A: Multiple states have agreed on a chemical assessment protocol to identify safer alternatives to priority chemicals. Safer alternatives are identified for 10 priority chemicals. (Same as IND H)

Recommendation MRW 2 — Reduce threats from mercury. (Also relates to Industries Initiative)

Help reduce and eliminate mercury by supporting and implementing the Washington State Mercury Chemical Action Plan (WSMCAP). WSMCAP, part of a statewide long-term strategy for eliminating persistent bioaccumulative toxins, or PBTs, includes actions to decrease mercury from all sources. Some significant sources of mercury are in the moderate-risk waste arena. Addressing them is crucial to the success of the overall action plan. Specific actions that support the goals of the WSMCAP include technical assistance to businesses, education to businesses, households, and schools, and supporting a mercury collection, repository, and recycling infrastructure. We need to build on the growing momentum for product stewardship for mercury. This will result in long-term reductions of mercury in products and will reduce improper disposal of mercury-containing products and wastes.

Milestone MRW B: Product stewardship systems for fluorescent and other mercury-containing lamps, mercury thermostats, and other mercury-containing devices are in place. Mercury in biosolids continues to diminish.

Milestone IND R: The Washington State Mercury Plan has been fully implemented for hospitals, auto switches, and lamps. A national repository for mercury is in place, resulting in significantly less mercury in the environment.

Recommendation MRW 3 — Reduce threats from PBTs (Persistent Bioaccumulative Toxins). (Also relates to Industries Initiative)

Participate in and support development of statewide chemical action plans to reduce threats posed by persistent bio-accumulative toxins. Assist with developing a polycyclic aromatic hydrocarbons (PAH) Chemical Action Plan and implementing the Lead Chemical Action Plan as it relates to the moderate-risk waste stream.

Milestone MRW C: The Lead Chemical Action Plan (CAP) is implemented and additional work is being done on other PBTs.

Recommendation MRW 4 — Develop a more comprehensive list of covered electronics through a product stewardship infrastructure.

Representatives from local government, Ecology, and environmental organizations should continue to work with the electronics industry on a comprehensive product stewardship system for electronic products. It is also essential to build awareness of the hazards inherent in electronic products and wastes. The E-Cycle Washington program of manufacturer responsibility for computers, laptops, monitors, and televisions, is a tremendous first step. However, the existing system could add many more electronic products to provide needed collection and recovery of materials. This will further reduce the need for government to provide end-

of-life management of these products. This also will create new businesses and jobs. As it expands, the electronics infrastructure needs to include:

- Accessible and effective take-back systems for electronic products.
- Electronics recycling that does not harm human health or the environment.
- Product re-design to eliminate hazardous components, ease disassembly and recycling, and lengthen life span.

Milestone MRW D: The scope of electronic products covered by the existing producer-provided program expands beyond the current four categories (TVs, computers, computer monitors, and laptops).

Recommendation MRW 5 — Reduce the use of high-risk pesticides, emphasize proper use, and encourage effective alternatives.

Collaborate with the Washington State Department of Agriculture, EPA, pesticide applicators, local government, environmental organizations, and others to develop criteria to identify high-risk pesticides used by households and in other small-quantity applications. Develop a plan to promote effective alternatives and ensure proper use when high-risk pesticides are used in households and other small, non-agricultural applications.

Milestone MRW E: The amount of high-risk, non-agricultural pesticides found in urban waters has decreased.

Milestone MRW F: Use of non-agricultural pesticide alternatives and lower-risk pesticides has increased, as indicated by shelf surveys or other methods.

Milestone MRW G: The number of school districts, municipalities, and other government entities using integrated pest management (IPM) and other alternatives has increased. IPM programs stress preventive pest control with pesticides used as a last resort.

Recommendation MRW 6 — Reduce and manage all architectural paint wastes.

Architectural paints are used on stationary structures. Support the development of a regional or national product stewardship infrastructure for architectural paints and coatings, including a manufacturer take-back network. Legislation to allow a paint stewardship organization to operate legally on behalf of industry may be necessary. Also, work to reduce architectural paint wastes and the use of toxics in such paints.

Milestone MRW H: An industry-provided management system for leftover architectural paint is created through the passage of paint product stewardship legislation or product stewardship framework legislation that includes paint.

Recommendation MRW 7 — Implement and promote Environmentally Preferable Purchasing at state and local governments and in institutional settings, with Ecology leading by example. Support the Climate Action Team proposals and other initiatives.

Government will lead by example in the development and implementation of environmentally preferable purchasing (EPP) policies and practices. Actions to support this include:

- Convene an intergovernmental workgroup to assess progress on EPP practices, review state and local purchasing laws and regulations, and identify barriers to environmentally preferable purchasing.
- Recommend changes to laws, regulations, and practices to agencies and state legislature as needed.
- Increase technical assistance to state grantees and state and local agencies, which will result in greater promotion and sales of EPP goods and services.

- Collaborate with local governments to advance EPP.
- Address challenges with measuring progress and purchases of EPP.

Milestone MRW I: Legislation is modified to support more environmentally preferable purchasing, a program to track EPP purchases is in place, and sales of EPP goods and services are increasing. (Same as IND O)

Recommendation MRW 8 — Ensure MRW and hazardous substances are regulated and managed according to hazards, toxicity, and risk.

Develop a long-term strategy to evaluate and, if needed, modify environmental laws and regulations that govern MRW. Analyze various approaches, including product-based preventive approaches, for addressing threats from MRW. The overall goal is to move towards prevention of toxics and waste. The path for reaching this goal is not yet clear. The work within this, and other related recommendations, will help identify the best path. The strategy will need to:

- Provide more incentive for the reduction of target risk factors, such as toxicity, mobility, and persistence, and ensure that wastes that exhibit these target risk factors are subject to the highest level of care the regulatory system affords, possibly regardless of quantity.
- Move Washington to a more comprehensive regulatory system that removes barriers and provides incentives to reduce the same target risk factors associated with products that contain hazardous substances.
- Analyze the effect of larger, prevention-focused system-change efforts on the MRW regulatory structure, and the need for smaller regulatory changes. The larger systemic efforts include a product stewardship framework, using the PBT and the Children's Safe Products Act chemical lists, and potential statutory adjustments. Also, use information on MRW threats in Washington State, gained from studies done as proposed in Recommendation MRW 12.
- Look for ways to manage less-hazardous waste in a more cost-effective manner.

Milestone MRW J: Ecology staff has researched regulatory change strategies for preventing threats from MRW and hazardous substances. The agency is moving in the recommended direction. Along with Ecology, local governments focus on preventing threats from MRW.

Recommendation MRW 9 — Support full implementation of local hazardous waste plans.

Encourage all local jurisdictions to have current hazardous waste management plans and to implement fully the six required elements of local hazardous waste plans through the following actions:

- Prepare a status report detailing statewide implementation.
- Develop ways to use the existing MRW collection infrastructure to support prevention, product stewardship, and additional closed-loop recycling efforts.
- Utilize the revised local hazardous waste planning guidelines that more completely reflect the Beyond Waste goals and vision for the future.
- Provide assistance to local jurisdictions for plan updates and implementation.
- Provide for regular review of local hazardous waste programs.

Milestone MRW K: Local hazardous waste plans are up to date and being fully implemented in accordance with Chapter 70.105 RCW and the new local hazardous waste planning guidelines. Full implementation includes all six required program elements:

1. Public education
4. CESQG collection assistance

2. Business technical assistance
3. HHW collection
5. Enforcement
6. Used oil collection and education

Recommendation MRW 10 — Ensure businesses and facilities handling MRW comply with environmental laws and regulations. Encourage as much reuse and recycling of MRW as possible.

Evaluate the existing compliance strategy, and create a plan for strengthening it. Consider:

- Providing technical assistance on a system-wide basis.
- Increasing use of Environmental Management Systems.
- Ensuring consistency with local hazardous waste plans.
- Using regulations to encourage additional reuse and recycling.
- Increasing focus on and encouraging the prevention of MRW wherever possible.
- Ensuring safe management of today's hazardous waste, which, if mismanaged, gets into soil and water.

Milestone MRW L: MRW facilities, including treatment, storage, and disposal facilities separately handling MRW, comply with Chapter 173-350 WAC. The facilities reuse or recycle an increasing proportion of MRW.

Recommendation MRW 11 — Educate the public and businesses on prevention, proper use, storage, and disposal of hazardous products and wastes. Encourage safer alternatives to minimize toxic threats, especially to vulnerable populations. (Same as IND 14)

Products are a significant source for toxic chemicals getting into the environment generally and Puget Sound specifically. Education is needed to reduce these risks.

- Work toward a statewide effort to maximize the effectiveness of education efforts, with consistent messages across jurisdictions.
- Provide the public with information on choosing the safest product to meet their needs, and to handle it properly. This could include product composition and appropriate third-party certification systems. This will help the public drive demand for EPP products.

Milestone MRW M: Statewide education that minimizes toxic threats is in place and complements local and regional efforts. (Same as IND P)

Milestone MRW N: Fewer toxic products are purchased, misused, and disposed of improperly. The public is more aware of what chemicals are in products. (Same as IND Q)

Recommendation MRW 12 — Develop and implement a strategy for a more regionally focused MRW program by evaluating the most significant threats and effective approaches, including safer alternatives, to reducing those threats.

Determine priorities of focus for MRW efforts. Use these priorities to develop an integrated statewide MRW implementation strategy. This integrated approach will consider regional variations of population density, vulnerable watersheds, and toxic product use patterns to provide both a statewide and local focus.

Help develop priorities by analyzing existing studies, and evaluating and filling in information gaps. Studies to examine include the Oregon household hazardous waste priorities study and work associated with the Children's Safe Products Act, Puget Sound Partnership, Safer Chemical Alternatives research, PBT Chemical Action Plans, and the results of Local Source Control technical assistance visits. Work done in support of recommendations MRW 1 and MRW 8 also may provide useful data.

Using this information and in collaboration with local governments, develop a strategy to guide work on MRW, including:

- Provide information for the statewide education program.
- Supplement local educational materials.
- Target Coordinated Prevention Grants (CPG) and Public Participation Grants (PPG) awards.
- Specify duties of local source control specialists.
- Provide guidance and/or regulatory interpretation on handling and disposing of specific materials.
- Consider statutory changes.
- Select sector campaigns.

Milestone MRW O: A regional MRW strategy, based on existing and new studies, is developed and being implemented.

Implementation strategies for this initiative can be found on page 62.

Initiative #3

Increasing Recycling for Organic Materials

You can access a detailed Background Paper from 2004 on the Organic Materials Initiative, including all appropriate citations, at *www.ecy.wa.gov/biblio/0407027.html*.

Introduction

The Organic Materials Initiative will help expand and strengthen the closed-loop reuse and recycling system in Washington for organic materials. This system will convert leftover or excess organic materials into feedstocks for resources and bio-products such as compost, bioenergy, and biofuels, without creating new wastes. The extensive list of "organic materials" includes substances and products of biological origin that we could safely return to the soil or turn into new products. Organic materials include yard waste, food scraps, manures, crop residues, soiled/low-grade paper, wood, and biosolids.

Ultimately, a closed-loop system for residual organic materials depends upon processing organics according to the highest and best uses possible. When establishing this hierarchy, we must consider environmental, social, and economic impacts. Benefits of a closed-loop organics recycling system include:

- Reduced demand for landfill space.
- Reduced release of greenhouse gases.
- Reduced need for added chemicals (such as fertilizers and pesticides) to agricultural lands.
- Improved soil quality and structure.
- Production of renewable fuels.
- Water conservation.
- Creation of new jobs.
- Climate change mitigation actions, such as carbon sequestration.

This initiative is key to achieving the Beyond Waste vision because:

1. Organic materials represent a significant portion of Washington's commercial and residential waste streams. Agriculture, forestry, and the food-processing industry also generate large quantities of organic materials.
2. Organic materials are easily recycled into new products such as biofuel, fiberboard, and soil amendments.
3. Substantial infrastructure for recycling organic materials already exists. We can establish a viable organics cycle by expanding infrastructure to fill in gaps and supporting new processing technologies.
4. Organics recycling provides significant environmental and human health benefits. Practices such as landfilling organics, open burning, and storing manures in open lagoons contribute to climate change by releasing greenhouse gasses.

Today's Reality

Organic materials make up about 30 percent of the municipal solid waste generated by Washington residences, businesses and institutions. The majority of these organic materials – food waste, yard waste, compostable paper, clean wood, and textiles – are now landfilled or incinerated.

Statewide, the recovery of yard debris grew from almost nothing in 1988 to 818,000 tons in 2007. Government focus on waste diversion and procurement of recycled products drives this rapid growth. This growth provides momentum to help recover even greater quantities of organic materials.

Keeping organics out of the landfill reduces greenhouse gas emissions by decreasing methane, a potent greenhouse gas that's released during decomposition. Turning organics into compost, bioenergy, biofuels, and other products promotes economic vitality in growing industries, and protects the environment.

Compost used on the soil retains a large volume of water, reduces runoff and erosion, increases nutrient availability for plants, and improves the soil structure. Compost can remove pollutants (heavy metals, nitrogen, phosphorus, oil, grease, and fuel) from stormwater, thus improving downstream water quality. Processing organic materials such as manure, food scraps or woody wastes, through anaerobic digestion, pyrolysis, or gasification produces energy and fuels to reduce fossil fuel use, localizes our energy resources, and reduces greenhouse gas emissions.

Goals: What Washington will look like in 30 years (by 2035)

The following are 30-year goals for the Organic Materials Initiative:

Robust markets.

There are robust markets for organic-based products in all sectors of the economy. There is demand for high-quality organic products in the marketplace, from soil amendments and recycled consumer goods to green energy sources.

Closed-loop materials management.

Organics collection and processing is optimized. A network of businesses thrives on transforming residual organic materials into beneficial products. Changes in industrial processes and on-site management, such

as composting, have reduced the quantity of organic waste. Organic materials are transformed into beneficial products according to highest and best use.

Society supports a sustainable organics cycle.

Full organics recovery and beneficial use are the norms in Washington State. Businesses and governments incorporate full organics recovery into their decisions. Economic and regulatory incentives are aligned to support this system. Recycling and reuse of organics are efficient due to minimal presence of contamination or composite products in the system. People use organic products widely and regularly to improve soil quality in urban, suburban, and agricultural areas.

Recommended Actions and Five-year Milestones

Meeting the objectives of the following recommendations will help the Organic Materials Initiative meet its 30-year goals. The milestones will measure progress over the next five years.

Recommendation ORG 1 — Lead by example in government.

Government will lead by example both through organics recovery programs as well as through the purchase and use of more recycled organic products. Specifically, governments will:

- Maximize procurement of recycled organic products and use of products that do not lead to contamination of organic materials.
- Establish programs and clear guidelines on food waste prevention at residential, commercial, and institutional levels.
- Include compost as a component of Environmentally Preferable Purchasing, and Integrated Pest Management programs.
- Identify incentives to increase organic management programs at state and local government agencies, and institutions.
- Advertise success of organics recycling projects.

Milestone ORG E: Most people (government, business, and the public) understand the benefits of healthy soils.

Milestone ORG J: Organics recovery (including landscaping and food scraps) occurs in 50 percent of all state and local government buildings and institutions, including the Capitol Campus. State and local agencies and institutions are required to use compost as a landscape management tool to reduce water and pesticide use.

Milestone ORG M: Food waste prevention is a focus of state and local government. This includes edible food recovery for redistribution to organizations serving hungry people and food waste prevention programs at the residential, commercial, and institutional level. Work will be supported by a guidance document developed by Ecology.

Recommendation ORG 2 — Increase residential and commercial organics recovery programs.

Expand and increase organics recovery programs in residential and commercial sectors, recognizing that capacity for processing organics needs to grow with increased recovery, and opportunities differ between rural and urban areas of the state. Needed actions include:

- Incorporate Organics Materials Initiative goals into local-jurisdiction solid waste management plans.
- Assess yard debris and food scrap recycling infrastructure in large municipalities.

- Align the diverse interests of stakeholders to create a beneficial use hierarchy for recycled organic materials. Maintain core values of reducing, reusing and recycling materials.
- Provide "tools" (such as education materials and technical assistance) to coordinators of home compost programs.
- Identify incentives for local governments to increase organics collection and processing capacity.
- Promote the purchase of recycled organic products through "healthy soil" education, to create stable markets for recycled organics.
- Remove regulatory barriers to promote increased organics processing capacity.
- Support new processing technologies that provide a variety of organics recycling opportunities.
- Expand or implement home composting programs in every county.
- Work with local haulers and transfer stations to provide organics collection and diversion options.
- Advertise success of model residential and commercial organics recovery projects.

Milestone ORG B: Effective incentives for organics recycling are identified and pursued.

Milestone ORG C: Home composting programs are active and successful in every county.

Milestone ORG E: Most people (government, business, and the public) understand the benefits of healthy soils.

Milestone ORG F: Statutory and regulatory barriers to closed-loop organics recycling are addressed.

Milestone ORG G: A beneficial use hierarchy is created for residual organic material processing and uses.

Milestone ORG H: Soil carbon sequestration, using recycled organic materials, has increased based on research recommendations.

Milestone ORG I: Technical assistance, research, and/or capital expense funds support the development of at least two biomass-to-energy and biomass-to-fuel and co-products "organic refinery" projects.

Milestone ORG K: Statewide residential and commercial recycling of organics is standard practice, supported by efficient collection and increased infrastructure. Large municipalities offer food waste collection programs to residential and commercial customers.

Recommendation ORG 3 — Improve quality of recycled organic products.

For organic materials to continue to be valued commodities, consumers must have confidence in the quality of recycled organic products. A number of actions, including consumer education, are needed to address the quality of recycled organic products and thereby improve consumer confidence:

- Promote the use of labeling or information sheets for recycled organic products.
- Work with processors, consumers, and regulatory agencies to identify quality concerns with different recycled organic products.
- Recommend steps to overcome contamination and other quality issues.
- Develop quality standards for unregulated recycled organic products.
- Create a recognition program for processors that meet or exceed quality standards.

- Build partnerships with retailers to feature natural yard care products (such as compost) and practices (such as grass-cycling) that most effectively control pests or have the biggest benefits with the least negative environmental impact.
- Publish and distribute a series of focus sheets or "frequently asked questions" about different recycled organic products.
- Evaluate effectiveness of WAC 173-350 to ensure high quality recycled organic products.

Milestone ORG C: Home composting programs are active and successful in every county.

Milestone ORG D: The quality of recycled organic products has improved.

Milestone ORG E: Most people (government, business, and the public) understand the benefits of healthy soils.

Milestone ORG L: Major retailers promote the use of natural yard care and pest control products, including compost.

Recommendation ORG 4 — Develop a strategy to increase industrial and agricultural organics recovery.

Organics from agricultural and industrial sources (such as food processors) represent a large portion of wasted or under-utilized resources. Ecology and associated stakeholders will develop and implement a strategy to increase closed-loop recycling in the industrial and agricultural sectors. Consider the following actions as the strategy is developed and implemented:

- Develop a set of specific actions and a proposed timeline for increasing organics recovery and recycling throughout these sectors.
- Work with stakeholders to identify barriers and opportunities for increasing agricultural organics recovery.
- Develop and promote incentives to closed-loop materials management.
- Advertise success of model agricultural and industrial organic material recycling projects.

Milestone ORG A: A strategy for increasing agricultural and industrial organics recycling is being implemented.

Milestone ORG B: Effective incentives for organics recycling are identified and pursued.

Milestone ORG F: Statutory and regulatory barriers to closed-loop organics recycling are addressed.

Milestone ORG G: A beneficial use hierarchy is created for residual organic material processing and uses.

Milestone ORG H: Soil carbon sequestration using recycled organic materials has increased based on research recommendations.

Milestone ORG I: Technical assistance, research, and/or capital expense funds support the development of at least two biomass-to-energy and biomass-to-fuel and co-products "organic refinery" projects.

Recommendation ORG 5 — Propose solutions to statutory and regulatory barriers.

Identify, evaluate, and propose solutions to statutory and regulatory barriers for developing and sustaining a closed-loop organics cycle in Washington. Actions in a number of areas are needed to support expansion of the organics cycle successfully:

- Convene stakeholders to identify statutory and regulatory barriers to sustainable organics management systems.
- Address regulatory barriers and clarify confusing language in existing regulations as it applies to organics management systems.
- Increase communication and common understanding of regulations between state, local, and federal governments.

Milestone ORG A: A strategy for increasing agricultural and industrial organics recycling is being implemented.

Milestone ORG B: Effective incentives for organics recycling are identified and pursued.

Milestone ORG F: Statutory and regulatory barriers to closed-loop organics recycling are addressed.

Recommendation ORG 6 — Develop new products and technologies for organic residuals.

Research and develop best practices, additional products, and new technologies for organics recycling. Specific actions include:

- Develop and promote best practices for organics collection and processing.
- Quantify capacity and opportunity for adding municipal food waste to anaerobic digesters at wastewater treatment plants.
- Participate in and support sustainable bioenergy and biofuel research and development.
- Identify incentives that foster new technology and product development where by-products from one process become feedstocks for another.
- Fund research on the effect of organic materials (such as biosolids, biochar, and crop residues) on soil carbon sequestration, water holding capacity and other soil health indicators.
- Establish a process to quickly resolve regulatory oversight issues for developing technologies.

Milestone ORG B: Effective incentives for organics recycling are identified and pursued.

Milestone ORG F: Statutory and regulatory barriers to closed-loop organics recycling are addressed.

Milestone ORG G: A beneficial use hierarchy is created for residual organic material processing and uses.

Milestone ORG H: Soil carbon sequestration, using recycled organic materials, has increased based on research recommendations.

Milestone ORG I: Technical assistance, research, and/or capital expense funds support the development of at least two biomass-to-energy and biomass-to-fuel and co-products "organic refinery" projects.

Implementation strategies for this initiative can be found on page 65.

Initiative #4

Making Green Building Practices Mainstream

You can access a detailed Background Paper from 2004 on the Green Building Initiative, including all appropriate citations, at *www.ecy.wa.gov/biblio/0407028.html*.

Green Building defined

"… design and construction practices that significantly reduce or eliminate the negative impact of buildings on the environment and occupants in (the) five broad areas (of): sustainable site planning; conservation of materials and resources; energy efficiency and renewable energy; safeguarding water and water efficiency; and indoor air quality."

Introduction

The short-term goal of the Green Building Initiative is to increase adoption of green building construction, operation, and deconstruction practices throughout the state and the region. The term green building, synonymous with sustainable building, appears throughout this section because it is widely used to represent these practices and the buildings that result. We have adapted the U.S. Green Building Council's definition of green design to describe green building (see box to the right).

The 30-year goal of this initiative is for "green building" to be a mainstream and usual practice throughout the state. We have identified an increased focus on green building a key means to significantly reduce wastes, mitigate climate change, and reduce the use of toxic substances in our state.

We selected this initiative as one of the keys to Beyond Waste for four main reasons:

1. Construction and demolition waste makes up roughly one-third of the solid waste generated in Washington. This represents inefficient use of valuable resources and business capital, and creates waste management challenges. Reducing the amounts and negative effects of construction and demolition wastes will result in significant progress toward Beyond Waste.
2. Strong partnerships across the state already work to promote green building practices. Companies and governments across the country and in many parts of the world are embracing green building. Continuing to focus on partnerships has potential to accelerate success.
3. Political support is strong. Green building is identified in the Governor's Sustainability Executive Order, required of all public buildings (Chapter 39.35D RCW), identified as a key component of climate change mitigation, and viewed as an important method of reducing toxics in the environment.
4. Green building practices address multiple problems and yield multiple benefits. The transition to building "green" will bring many benefits to public and individual health, the economy and the environment. It also will ease the strain on natural resources and Washington's waste management system.

Today's Reality

The building industry has long been a strong component of Washington's economy. In 2007, an estimated 270,000 workers were employed by contractors, construction services, and materials suppliers in the state. This resulted in $13 billion for Washington's economy. It is estimated that every $1 million spent on new construction in Washington creates 16 jobs.

It is important, however, that construction practices consider the environment. The built environment plays a significant role in a number of our current environmental priorities. According to the U.S. Green Building Council:

- Buildings account for 72 percent of electricity use and 39 percent of energy use in the United States.
- Buildings are responsible for 38 percent of carbon dioxide emissions in the United States each year.
- Design and construction of buildings creates about 136 million tons of solid waste a year.
- Buildings account for 40 percent of raw material consumption in the United States.

Buildings also contain potentially dangerous or hazardous substances:

- Treated wood products may contain arsenic, chromium, lead, pentachlorophenol, or creosote pesticides.
- Asbestos, lead, mercury or other known toxic substances, such as polybrominated diphenyl ethers (PBDE) flame-retardants and polyvinyl chloride (PVC) are found in paints and coatings, plumbing, fluorescent lighting, batteries, thermostats, siding, flooring, insulation, vinyl, plaster, wallboard, and other materials.

Goals: What Washington will look like in 30 years (by 2035)

The 30-year goals for the Green Building Initiative are as follows:

Green building practices are mainstream.
Green building practices and the demand for green homes and buildings are the norm in the Pacific Northwest, due in part to Washington State's leadership. Nearly 100 percent of all renovations and new construction adhere to the highest standards of green building.

Reuse of buildings and recycling of construction materials are normal business practices.
Adapting and reusing existing buildings is a higher priority than dismantling and recycling their components. Materials are safely recycled into high-value products. Recycled and reusable building materials are commonplace and sold through all mainstream building material supply businesses. A network of businesses thrives on reusing and recycling building materials.

Buildings and materials are designed for human, economic, and environmental health.
The design of buildings and construction materials has been transformed, and water and energy needs for buildings are met on-site. These buildings operate pollution free, generate no waste, and promote the health and well-being of all inhabitants. Toxic components have been phased out of building materials or recaptured for recycling, and materials are designed to be safely recycled or reused at the end of their life.

Recommended Actions and Five-year Milestones

The following recommended actions will help achieve the 30-year goals of the Green Building Initiative. The milestones will measure progress over the next five years.

Recommendation GB 1 — Coordinate and facilitate partnerships to implement the green building action plan.

We must maintain effective partnerships and continue collaboration between public agencies, non-profit organizations, and businesses that encourage green building. These partnerships will work to:

- Develop strategic plans that are consistent with the Beyond Waste Plan goals.
- Create green building education and outreach materials, and identify potential funding sources.

- Support the Cascadia Region Green Building Council in encouraging the expanded integration of the Living Building Challenge into current construction practices. The Living Building standard is the greenest building standard currently on the market.

Milestone GB A: Washington continues to be a leader in green building.

Milestone GB B: All new state-funded buildings continue to meet or exceed green building requirements.

Milestone GB G: At least five buildings are built to the Living Building standard in Washington.

Recommendation GB 2 — Lead by example in government.

State and local governments continue to lead by example to promote green building. All public buildings meet or exceed the LEED (Leadership in Energy and Environmental Design) Silver Standard, the Washington Sustainable Schools Protocol, or the Evergreen Standard for Affordable Housing (per Chapter 39.35D RCW).

- Continue to work with agencies affected by the state's green building mandate to ensure they have tools to meet green building requirements.
- Encourage local governments to adopt both green building and low-impact development (LID) policies.
- Participate in established processes for continuously improving green building standards as new technologies and issues emerge.
- Strive for all publicly owned and operated buildings to meet or exceed Architecture 2030 energy efficiency goals. Recent legislation requires energy audits on all public buildings to determine what improvements are needed to increase the building's efficiency.

Washington was the first state to require green building practices for all publicly funded buildings. In the next phase of the Beyond Waste plan, we must take this leadership to the next level: procurement.

- Focus on revising state government procurement processes to ensure the purchase of environmentally preferable products and green building materials.

Milestone GB A: Washington continues to be a leader in green building.

Milestone GB B: All new state-funded buildings continue to meet or exceed green building requirements.

Milestone GB C: Government continues to identify and remove regulatory barriers to green building.

Milestone GB H: At least 50 percent of all local governments in Washington have adopted green building policies and/or incentives.

Milestone GB J: Authorities adopt policies that require low-impact development (LID) strategies to be included in building design and maintenance.

Milestone GB K: Energy use in public buildings meets or exceeds Architecture 2030 goals.

Recommendation GB 3 — Provide incentives that encourage green design, construction, and deconstruction and begin removing disincentives.

If green building is to become a mainstream practice, incentives must be available to developers, contractors, and homeowners to defray some of the up-front costs of building green.

- Utilities, governments, and others create and promote incentives.
- Staff continues to identify federal, state, and local incentives already in place, and develop new incentives. Effective incentive programs may include rebates, fast-track permitting, and tax cuts.

Washington's regulatory climate should encourage, not simply accommodate, green building.

- Continue to identify and remove regulatory barriers that prohibit and/or contradict green building standards in the State Building Code, local building codes and other applicable state regulations, specifically those related to land use, zoning, stormwater management, water resources, and shoreline protection.

Milestone GB A: Washington continues to be a leader in green building.

Milestone GB C: Government continues to identify and remove regulatory barriers to green building.

Milestone GB G: At least five buildings are built to the Living Building standard in Washington.

Milestone GB H: At least 50 percent of all local governments in Washington have adopted green building policies and/or incentives.

Milestone GB J: Authorities adopt policies that require low-impact (LID) strategies to be included in building design and maintenance.

Recommendation GB 4 — Expand capacity and markets for reusing and recycling construction and demolition materials.

There is a lack of sufficient reuse and recycling infrastructure statewide. The next five years of Beyond Waste implementation will work on expanding these options.

- Identify places where additional capacity is needed for reuse and recycling of building materials, and begin planning to provide it.
- Initiate an outreach effort to contractors not currently building green to determine what needs to be in place (such as incentives or infrastructure) for them to implement job-site recycling programs.
- Continue to build markets for salvaged and recycled building materials.
- Promote reuse of existing building stock as an important waste reduction strategy.

In addition to recycling, it is important to divert as much construction and demolition debris from the waste stream as possible. Significant amounts of construction waste currently sent to a landfill or recycled could be re-used. Place continued emphasis on reuse and salvage. There are a number of deconstruction and salvage businesses in Washington. Residents across the state should have easy access to these organizations.

Milestone GB D: Ten percent of all certified green building projects achieve credits for using existing building stock or salvaged materials, and/or at least 75 percent waste diversion during construction.

Recommendation GB 5 — Provide and promote statewide residential and commercial green building programs.

Washington is the first state in the country to provide residential green building certification statewide.

- Continue to educate residents on their options in new home construction and home remodel.
- Work with existing organizations to build demand for certified green homes and green home remodels.

State-funded public buildings must be built green.

- Work to expand the number of local government and private commercial buildings built to green standards.

Milestone GB A: Washington continues to be a leader in green building.

Milestone GB C: Government continues to identify and remove regulatory barriers to green building.

Milestone GB E: Green buildings occupy 15 percent of the total market share for new construction in Washington.

Milestone GB G: At least five buildings are built to the Living Building standard in Washington.

Recommendation GB 6 — Increase awareness, knowledge, and access to green building resources.

Continue to promote the expansion of green building practices statewide through education and outreach.

Teach green design and green building. Students need knowledge of and easy access to green educational options prior to choosing their secondary education paths. Washington is a national leader in green building education and offers multiple courses in trade schools and colleges specific to green building practices, but there is room for more. The building sector promises to provide a platform for thousands of green jobs in Washington State.

Additionally, work to ensure Washington residents are familiar with and supportive of green building practices in their communities.

Milestone GB A: Washington continues to be a leader in green building.

Milestone GB B: All new state-funded buildings continue to meet or exceed green building requirements.

Milestone GB E: Green buildings occupy 15 percent of the total market share for new construction in Washington.

Milestone GB F: Washington offers degree and certificate programs in green building-related trades statewide.

Milestone GB G: At least five buildings are built to the Living Building standard in Washington.

Milestone GB K: Energy use in public buildings meets or exceeds Architecture 2003 goals.

Recommendation GB 7 — Encourage innovative product design.

With the existing manufacturing infrastructure in Washington, we have the capacity to become a leader in green product design and production. Green building standards offer credits for products containing recycled, low-toxic, and regionally produced materials. There is currently tremendous confusion in the marketplace as to what exactly is a green product. In order to ensure quality and eliminate green-washing, third-party verification systems that address key environmental factors in the manufacture, sale and end-of-life management of products are essential.

- Work with Washington manufacturers to encourage green product design. This work should emphasize manufacturer commitment to innovative product design and life-cycle management.

- Support efforts to develop product third-party certification programs for green building products.
- Support product stewardship programs for building products, such as carpet, paint, and those containing mercury or other toxins.

Milestone GB A: Washington continues to be a leader in green building.

Milestone GB D: Ten percent of all certified green building projects achieve credits for using existing building stock, or salvaged materials, and/or at least 75 percent waste diversion during construction.

Milestone GB G: At least five buildings are built to the Living Building standard in Washington.

Milestone GB I: A third-party certification system for green building materials effectively provides verification that products are manufactured in compliance with product stewardship and sustainability principles.

Implementation strategies for this initiative can be found on page 67.

Initiative #5

Measuring Progress Toward Beyond Waste

You can access a detailed Background Paper from 2004 on the Measuring Progress Initiative, including all appropriate citations, at *www.ecy.wa.gov/biblio/0407029.html*. You can access the Beyond Waste Progress Report at *www.ecy.wa.gov/beyondwaste/bwprog_front.html*.

Introduction

The goal of the Measuring Progress Initiative is to help Ecology and its partners make the transition to a long-term data-tracking system that measures progress toward the Beyond Waste vision. We are doing this by developing effective and reasonable ways to measure Washington's success at reducing the use of toxic substances and the generation of solid and hazardous wastes.

Some industries and local governments are developing their own indicators similar to Ecology's efforts to show Beyond Waste progress in their impact areas. Others may have few, if any, additional resources to invest in developing indicators, data collection, and reporting. As we implement the Beyond Waste Plan, Ecology is modifying and improving some data-collection efforts and developing additional methods to improve our data-tracking system.

We selected indicators, performance measures, and data tracking as an important area of focus for the following reasons:

1. It is critical to be able to measure success and track progress toward the Beyond Waste vision.
2. There is a continuing need for different evaluation tools. Tracking systems are incomplete and/or focus mostly on managing waste. Ecology needs to continue to build tools for measuring overall reduction of waste and toxic substances.

Today's Reality

Ecology continues to collect and report a huge amount of information about hazardous waste, toxic releases, and solid waste in Washington. Ecology collects data from facilities and businesses, government entities, outside associations, and other sources.

The existing data systems provide good information about hazardous and non-hazardous wastes. Data quality has improved over the years because Ecology worked with those entities that are required to report. Staff and the public can find the data through the Internet and the Solid Waste Annual Report (*www.ecy.wa.gov/programs/swfa/solidwastedata/report.asp*). Ecology has used these data to make projections and to develop performance measures.

In the first five years of Beyond Waste implementation, Ecology developed the Beyond Waste Progress Report (Progress Report; *www.ecy.wa.gov/beyondwaste/bwprog_front.html*), a new measurement tool for Beyond Waste. The Progress Report is becoming an important part of the solid waste and hazardous waste programs data and evaluation efforts. Recognizing this, agency management is beginning to look toward its broader applications. The Progress Report provides information for other agency initiatives such as climate change, reducing toxic threats, and Puget Sound. Local governments and others find the information useful.

Ecology must continue to build on the Beyond Waste Progress Report and its other data-collection efforts and revise them. We still face challenges in measuring progress toward the Beyond Waste vision:

- Occasional difficulty tracking trends due to regulatory changes or other factors.
- Lack of ability to predict changing waste generation trends.
- Limited ability to find comparable data with other states and entities as well as data for benchmarking, goal-setting, and predicting program impacts.
- Data accuracy varies with reporting methods and lacks verification.
- Limited ability to track use, storage, and disposal of hazardous substances.

The questions below, developed by a team of experts, provided direction for Ecology as the Beyond Waste Progress Report was developed. These questions remain relevant, and continue to outline important areas of focus as Ecology continues to refine its measurement systems:

Key Questions

1. Total waste: How much are we generating? And how many toxic substances are we using?
2. Inputs & efficiency: Are we reducing the use of materials over time?
3. Return flows & eco-effectiveness: How much and what is the value of the "waste" output returned and reused as material inputs?
4. Risk & inherent hazard: Are we reducing risks from toxic materials and wastes?
5. Contribution to vitality: Does eliminating wastes contribute to economic, environmental, and social vitality?
6. Behavior change: Are residents, businesses, and institutions taking actions to achieve the Beyond Waste vision?
7. Beyond Waste strategy effectiveness: Are Ecology's strategies achieving their intended goals?
8. Capacity & safety: Do we have adequate, safe facilities to handle the remaining wastes?

Goals: What Washington will look like in 30 years (by 2035)

Following are 30-year goals for the Measuring Progress Initiative:

A performance-indicator system has been developed to answer the Key Questions (above) and measure progress toward the Beyond Waste vision over the long term.

Data gaps have been identified, their significance has been determined, and the important gaps have been filled.

Existing data-collection systems at Ecology have been strengthened by supplementing existing data with other sources of information, such as site visits and surveys, and cross referencing data when appropriate.

Recommended Actions and Five-year Milestones

The following recommendations will help achieve the 30-year goals of the Measuring Progress Initiative. The milestones will measure progress over the next five years. (We developed all new recommendations and milestones for this update, because all recommendations and milestones pertaining to this initiative for the first five years of the plan were achieved.)

Recommendation DATA 1 — Consolidate all related and useful data collection efforts and develop a comprehensive data tracking and evaluation system for Beyond Waste and other environmental activities.

Ecology will continue to develop and improve the Beyond Waste Progress Report by consolidating related data collection efforts both inside and outside the agency, sharing methodologies, and building upon synergies in programs. Some examples are:

- Integrate the data collected under the Pollution Prevention Planning program with other data tracking efforts that feed the Progress Report.
- Integrate the solid and hazardous waste program performance measures with the Beyond Waste indicators.
- Align performance measures for Ecology grant programs containing Beyond Waste elements with Beyond Waste indicators.

Ecology and its partners must understand what is disposed in landfills, not just what is reported as recycled, so we can determine where to focus our future efforts. To gain that understanding, Ecology will conduct statewide waste characterization studies on a regular basis. These studies will serve Ecology solid and hazardous waste programs as well as other government and private sector managers and planners.

When evaluated with waste volumes, composition information:

- Helps determine the total availability of materials for recycling.
- Helps determine waste stream quality.
- Provides data for trends analysis to determine effectiveness of waste reduction and recycling programs.
- Gives a look at consumer preferences and emerging waste streams of concern.

Ecology will coordinate with local government to incorporate relevant county and city waste characterization data and provide a venue through which local agencies and the broader public can access these comprehensive data.

Milestone DATA A: The majority of Waste 2 Resources and Hazardous Waste and Toxic Reduction staff work plan activities correspond to Beyond Waste indicators. The Agency understands how Beyond Waste indicators relate to Agency performance measures.

Milestone DATA B: A waste characterization study is completed every four years. State studies are coordinated with waste characterization studies done at the local level. (Same as SW F)

Recommendation DATA 2 — Update and review existing indicators on an annual basis. Develop and implement an evaluation process for all working indicators. Eliminate non-useful, non-viable measures, and add potential new measures.

Every year, Ecology will review the indicators in the Progress Report to determine their relevance to initiatives as well as the plan recommendations and milestones. At least every five years, Ecology and its partners will fully evaluate the indicators to determine whether they are still adequately answering key questions on Beyond Waste progress or whether we need new or different indicators.

As part of the evaluation process, Ecology and its partners will:

- Discuss efforts made to date on closing data gaps such as the lack of good data on small-volume hazardous materials purchased, used, and disposed.
- Explain what has been done to increase the effectiveness of existing data-collection efforts.

Milestone DATA C: An evaluation process and recommendations for existing indicators are in place.

Recommendation DATA 3 — Base policy decisions on analysis of trends and projections based on Beyond Waste indicators.

This is the overall goal of the Beyond Waste Progress Report. Ecology and its partners will evaluate whether this goal is met or not. Indicators will drive policy, inside and outside the agency, by analysis of underlying trends and projections. Policy and decision makers for Ecology and its partners will view indicators as a whole, to get a clear picture of progress toward Beyond Waste, further its implementation, and identify areas of success and failure and needs for redistribution of resources.

Staff, local government, and agency management and decision makers will understand how their work and agency programs fit in with the Beyond Waste Plan.

- Indicators will be connected upward to other program or agency measures, and downwards to staff work plans.
- Ecology will establish goals for existing indicators, based on how initiatives are expected to impact indicator levels over time.
- Benchmarking, which is the process of comparing our indicator achievement levels to a particular standard (such as comparing with other states' recycling data), will help guide policy decisions.

Milestone DATA D: Annual indicator reports include goals and are evaluated. Policy decisions are based on the trend analysis.

Recommendation DATA 4 — Continue to expand the communication strategy for the Beyond Waste Progress Report within Ecology and externally.

Ecology and its partners will establish a marketing strategy for the Progress Report, with the intent of increasing the audience and impact of the indicators.

As part of this effort, Ecology and its partners will:

- Recognize the Progress Report is an important communication tool for the Beyond Waste Plan.
- Acknowledge that the audiences for the Progress Report vary as widely as do the intended participants for all the recommendations and milestones of the Plan.

Two goals of the increased communication are to:

- Provide the public with a quick gauge for their activities as consumers.
- Provide high-level decision makers a detailed and multi-layered analysis of our progress toward long-term goals.

Milestone DATA E: The progress report receives publicity internally and externally.

Recommendation DATA 5 — Update and enhance the Consumer Environmental Index (CEI).

The CEI model is a complex and comprehensive tool that focuses on consumer spending patterns and their impacts. As consumer spending changes and drives the markets and thus manufacturing, the model tracks the impacts in the three phases of a product (manufacturing, use, and disposal) to demonstrate impacts of changes in consumers' behaviors. The CEI model draws on various data sources, such as consumer spending data from the Bureau of Labor Statistics. Ecology and its partners will update these various data sources on an annual basis to maintain the CEI-related indicators in their present form.
www.ecy.wa.gov/programs/swfa/swac/docs/SWAC2008JanCEIbackground.pdf

Ecology will also work with its partners to enhance the CEI. We will add new line items as more data and resources become available. To complete this model, new house construction, government spending, and agricultural impacts and spending patterns need to be added.

Milestone DATA F: Annual updates of the CEI as it currently exists are completed.

Milestone DATA G: A strategy to enhance the CEI is in place and enhancements are in progress.

Implementation strategies for this initiative can be found on page 69.

Other Hazardous Waste & Solid Waste Issues

Introduction

This section summarizes specific hazardous waste and solid waste issues. It discusses priority issues to help strengthen the existing hazardous and solid waste management systems while we work towards achieving the Beyond Waste vision, and includes recommendations and milestones for addressing these needs.

Current Hazardous Waste System Issues

You can access a detailed Background Paper on the Current Hazardous Waste System Issues at *www.ecy.wa.gov/biblio/0407030.html*.

Ecology's Hazardous Waste and Toxics Reduction (HWTR) Program activities are grouped into three subject areas: pollution prevention (P2), compliance with regulations, and permitting/corrective action at facilities that manage hazardous wastes.

1. Pollution Prevention (P2)

Washington's Hazardous Waste Reduction Act (Chapter 70.95C RCW) passed in 1990. Since then, 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. The state P2 program conducted more than 4,500 site visits and 260 workshops for 13,000 people from 1992-2006, saving more than $400 million.

Today's Reality

Overall, the state has greatly benefited from the P2 program, because "pollution prevention pays." According to the National Pollution Prevention Roundtable, for every dollar businesses invested in P2, most earn a $6 return through cost savings and efficiencies. The table below shows Washington State P2 results.

Washington State Pollution Prevention Results: 1992 – 2007

Reductions	Amount	Financial Savings Estimated
Hazardous waste	206,000,000 pounds	$412,000,000
Hazardous substances	17,000,000 pounds	n/a
Solid Waste	106,000,000 pounds	$1,000,000
Energy conservation	161,000,000 kilowatt hours	$9,900,000
Water conservation	980,000,000 gallons	$1,800,000
Air pollution	55,000,000 pounds	n/a
Total		$424,700,000

Source: "P2 Results Data System," www.pprc.org/measure/index.cfm, WA State Pollution Prevention Plan Results for 2007.

State law requires P2 planning to identify opportunities to reduce the use of hazardous substances or the generation of hazardous wastes. Implementing these opportunities, however, is voluntary and does not always occur. P2 plans often address only those waste streams that are the easiest to reduce rather than those that are the most toxic. In addition, P2 plans do not emphasize enough reducing the use of hazardous substances, yet many "future wastes" (for example, used or discarded products) are hazardous because they contain such substances. Ecology's involvement with businesses is generally limited to regulating established activities. Ecology has few early opportunities to influence the decisions a business makes that affect the use of toxic substances and the generation of hazardous waste.

Ecology worked hard during the last five years to address some of these issues. For example, Ecology has streamlined the planning process with an earlier "in" and easier "out" of the P2 planning system. New facilities reporting hazardous waste receive a technical assistance visit encouraging them to reduce their wastes and avoid becoming a P2 planner in the first place. Ongoing efforts encourage planners to address the more toxic waste streams. Implementing the Toxics Reduction Advisory Committee (TRAC) recommendations also will help with this. (*www.ecy.wa.gov/programs/hwtr/TRAC/index.html*). We now need to encourage more plan implementation, with emphasis on reducing hazardous substances that pose the greatest risks.

Goals: What Washington will look like in 30 years (by 2035)

P2 planning will maximize effectiveness and help achieve the Beyond Waste vision by moving toward these goals:

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, including standardized use reports.

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.

Recommended Actions and Five-year Milestones

These recommendations provide detailed activities to help achieve the P2 planning goals listed above. The milestones will measure progress over the next five years.

Recommendation HW 1 — Encourage P2 planners to address hazardous substance use, including toxicity and risk, in their P2 plans. Additionally, encourage P2 planners to address environmentally preferable purchasing (EPP), solid waste and water reductions.

Develop additional incentives to encourage P2 planners to reduce the use of hazardous substances and address EPP, solid waste and water use. Implementing some of the TRAC recommendations will help with this effort. This may involve:

- Identifying safer alternatives and sharing results.
- Technical assistance.
- Modifying P2 fees to charge more for use of high priority chemicals.
- Low-interest loans.
- Pilot projects with published techniques and results that others can use.
- Possible rule and statute changes to provide better guidance on reporting use of hazardous substances.

Ways to encourage addressing toxicity and risk in P2 plans include:

- More standardized toxic substance use reporting.
- Screening and evaluation tools, such as accounting for complete costs.
- Mass balance, accounting for all materials in and all products and wastes out.
- More and better information on the Web.
- More training of staff, P2 planners, and other interested parties.
- Working with EPA and others to prioritize chemicals of concern and to examine new risks.

Milestone HW A: Most P2 plans comprehensively address hazardous substance use as well as EPP, solid waste, and water use when appropriate.

Recommendation HW 2 — Develop guidance on acceptable Environmental Management System (EMS) and environmental reporting systems.

Ecology developed a modified EMS model, and now needs to develop guidance to go along with that model. This guidance would help those that choose this approach instead of developing a standard P2 plan.

Milestone HW B: Guidance on acceptable EMS and environmental reporting systems is developed.

Recommendation HW 3 — Improve P2 plan quality and relationships with P2 planners. Work to ensure P2 plans are implemented.

Continue to improve the quality of P2 plans and Ecology's relationships with P2 planners. It doesn't matter how high quality a P2 plan is, if the facility never implements it. Good plans and good relationships encourage plan implementation. Possible ways to achieve this goal are:

- Put more information on the Web.
- Provide more training, especially webinars.
- Provide additional technical assistance to those most likely to implement.
- Work with a few pilot facilities to implement innovative ideas and then share them with others.
- Survey P2 planners to find out what works, what doesn't, and why.

Milestone HW C: Most P2 planners design and implement high quality plans. Relationships with P2 planners continue to improve.

Recommendation HW 4 — Encourage P2 planners to develop an energy management program to identify and implement conservation measures or renewable energy opportunities that reduce greenhouse gas emissions.

Some P2 planners are required to report their greenhouse gas production. Additionally sometimes, there is a connection between energy used, wastes produced, and materials used. Both energy conservation and solid waste recycling can reduce climate change impacts. A comprehensive overview of inputs and outputs that includes energy can help produce a better P2 plan. Currently, Ecology has an EPA grant to work with select facilities on this. Once the grant is completed, we will share the lessons learned to create an effective technical assistance program.

Milestone HW D: The majority of P2 planners implement effective energy management and related measures that result in continuous improvement and reduced emissions, including greenhouse gases.

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. The state Dangerous Waste Regulations (Chapter 173-303 WAC, *http://apps.leg.wa.gov/wac/default.aspx?cite=173-303*) are the foundation of the HWTR Program's compliance efforts. Formal inspections of, and informal visits to, waste generators are centered on the regulations.

Today's Reality

Businesses must file an annual report with Ecology if they generate more than 220 pounds of hazardous waste in any month. These businesses are referred to as medium or large quantity generators, or MQGs and LQGs, depending on the amount of hazardous wastes they generate. Ecology is responsible for inspecting about 1,200 medium and large businesses. Ecology inspectors must also respond to referrals from local government and complaints from the public.

The Environmental Protection Agency's Office of Enforcement and Compliance Assurance study, "The Analysis of Change in Generator Compliance Using Regulatory Compliance Indicator," shows compliance rates drop by 20 percent when inspections are done more than three years apart. In the last three years, with an inspection staff averaging 14, Ecology averaged 202 inspections per year, including resulting enforcement actions. At this rate, it will take more than five years to inspect all businesses. When compliance rates drop, there are significant increases in environmental threats. Due to the lack of regulatory presence, the current rate of finding environmental threats at inspected businesses is 76 percent – the highest rate since 1992. Ecology has asked for, but not received, legislative funding for more inspectors.

The state assists MQGs and LQGs in complying with hazardous waste regulations and reducing their use of toxic chemicals. Local governments, however, have the authority to help small quantity generators (SQGs) -- businesses that generate less than 220 pounds of hazardous wastes a month. Collectively, SQGs add up to a significant toxic threat. In 2006, Ecology estimated that more than 30,000 businesses likely generate hazardous waste in the Puget Sound area, yet less than 1,000 are in the state's hazardous waste tracking system. Most of these hazardous waste generators are small businesses. That is why Ecology asked and got authorization from the 2008 Legislature to establish the local source control program. Through this program, 10 local inspectors are hired to inspect these smaller generators and give them technical assistance. The inspectors have completed close to 2,000 technical assistance visits. Three additional urban waters specialists were also hired.

Goals: What Washington will look like in 30 years

The regulatory compliance activities of the HWTR Program will maximize effectiveness and help achieve the Beyond Waste vision through these goals:

Build on existing relationships.

Ecology has strong working relationships with hazardous waste generators, which has improved compliance with the Dangerous Waste Regulations. In addition, Ecology works constructively with other state agencies such as the Puget Sound Partnership, other Ecology programs, such as the Water Quality program, and local agencies, through the local source control specialists program to improve compliance efforts.

Improve information availability.

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

Protect Washington waters.

Ecology's efforts are helping to achieve the Governor's goal of restoring Puget Sound as well as protecting other waters in Washington State. As fewer resources go to cleanup, including cleaning up our water bodies, more resources go to preventing waste. Facilities pay the true cost of waste management, and waste minimization efforts are more cost-effective.

Recommended Actions and Five-year Milestones

These recommendations provide detailed activities to help achieve the regulatory compliance goals listed above. The milestones will measure progress over the next five years.

Recommendation HW 5 — Increase the number of local and state compliance inspectors so staffing levels are sufficient to inspect Large and Medium Quantity Generators (LQGs and MQGs) every three years and to provide most counties with local source control inspectors.

Strive for a more efficient enforcement process to free up inspector's time for more fieldwork. Regulatory partnerships, especially around stormwater runoff, will be encouraged as a way to leverage compliance presence and better protect the environment.

Milestone HW E: The chance of finding a significant environmental threat during a compliance inspection will drop to 50 percent.

Recommendation HW 6 — Additional user-friendly information is available to regulated facilities on how to comply with the Dangerous Waste Regulations.

Some tools to use are:

- More compliance information on the Web.
- Web-based training.
- Training for inspectors.
- Additional feedback from the regulated community on what information is desired and effective.

Milestone HW F: Businesses use the additional compliance information available and have a better understanding of compliance with the regulations.

Recommendation HW 7 — Work toward safer management of small quantity generator (SQG) wastes.

SQG wastes can be as toxic and dangerous as LQG wastes; they are just generated in smaller quantities. Various optional approaches will be researched and considered. Some require legislative action.

- Expand the local source control specialist program. However, even an expanded program will not be able to visit all SQGs so additional tools are vital.
- Provide more specific technical assistance information geared to SQG's.
- Prohibit the more toxic SQG wastes (PBT's, etc) from being disposed in solid waste landfills.
- Establish product stewardship programs.
- Encourage the use of safer chemical alternatives.
- Require additional reporting for SQG's so both state and local governments have a better understanding of the SQG universe of wastes, including types and quantities generated.

Milestone HW G: Fewer environmental problems result from how SQG's manage their waste.

3. Permitting/Corrective Action

Ecology issues waste management permits to facilities that treat, store, or dispose (TSD) of hazardous waste. A hazardous waste management or TSD facility must meet the conditions of its permit and must comply with state and federal regulations on its operation, when it ceases operating, and when it closes. Releases of hazardous wastes from TSD facilities during operation are cleaned up under a process called "corrective action."

Today's Reality

We are meeting the goal of preventing releases to the air, soil, and groundwater through permits, technical assistance, and monitoring of compliance with the regulations at active waste management facilities. Ecology oversees corrective action at 22 high-priority and 17 medium- and low-priority facilities. By 2020, Ecology expects to have cleanup remedies constructed for releases of hazardous wastes at 95 percent of the 39 facilities under Ecology oversight.

We completed much work with corrective action facilities over the last five years. EPA created tools to develop accurate cost estimates for closure/corrective action facilities and Ecology staff has received training on how to use them. We implemented regulatory flexibility and streamlined permits. The Legislature provided more funding to continue making progress on cleanups. We put a certificate program in place for recyclers. We still need to continue ongoing work with facilities permitted in part by local government, as well as encouraging legitimate hazardous waste recycling. Also, we need to update older permits to ensure they cover the full costs of closure.

Goals: What Washington will look like in 30 years (by 2035)

The permitting/corrective action activities for the HWTR Program will maximize effectiveness and help achieve the Beyond Waste vision through these goals:

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

Acquire more technical assistance.
Ecology seeks technical assistance from EPA on financial assurance, including cost modeling.

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

Transform existing TSDs.
As we meet the goals of Beyond Waste and diminish the need for waste management facilities, we provide TSDs with technical assistance to allow them to mature into "second generation" TSDs. Second generation TSDs provide treatment (reclamation, reuse, or recovery for beneficial value) of remaining wastes, or stocking and distribution of reusable materials for industrial and commercial uses.

Recommended Actions and Five-year Milestones

These recommendations provide detailed activities to help to achieve the permitting and corrective action goals listed above. The milestones will measure progress over the next five years.

Recommendation HW 8 — Ecology management work with appropriate local health authorities to gain greater oversight for Treatment, Storage and Disposal Facilities (TSDs) currently permitted in part by local government.

Permitting and inspecting only part of a facility doesn't ensure adequate environmental protection. Due to state law, this situation can occur when a TSD also includes a moderate risk waste (MRW) facility.

However, under Ecology regulations a local health department can choose to opt out of permitting the portion of a TSD that accepts MRW and have Ecology inspect the whole facility. This has been done for at least one facility. Another option may be a joint permitting arrangement. These preferable options will be pursued rather than attempting to change the law.

Milestone HW H: Ecology staff can inform the public that an entire TSD operates in a safe manner, not just the state permitted sections of a TSD.

Recommendation HW 9 — Ecology staff continues to ensure all state permitted TSDs are operated in a safe manner.

Enforce compliance with existing laws and regulations, both environmental and financial assurance. Financial assurance is critical to cover costs of closure and post-closure.

Milestone HW I: No new Corrective Action (CA) sites are created at permitted TSDs and hazardous waste facilities.

Recommendation HW 10 — Ecology continues to make progress on the goal to have environmental contamination under control at HWTR permitted corrective action sites by 2020.

Currently, Ecology is on track to meet this agreement with EPA.

Milestone HW J: Ecology is on track to have environmental contamination under control at 95 percent of the HWTR permitted corrective action sites by 2020.

Recommendation HW 11—Ecology staff, through technical assistance and permitting authority, work to encourage safe hazardous waste recycling at TSD facilities.

Ensure current recycling is being done in a safe manner, and encourage additional recycling. Determine recycling to be legitimate in accordance with Ecology regulations and EPA guidelines. More research may be the first necessary step.

Milestone HW K: All existing facilities that recycle hazardous waste comply with existing environmental regulations.

Implementation strategies for this section can be found on page 71.

Current Solid Waste System Issues

This section is grouped into four sections: solid waste authorities and local planning; waste reduction, recycling and the technical nutrient cycle; disposal, and financing. These services and activities are pivotal to moving toward Beyond Waste and helping to create a stronger and healthier future for Washington.

1. Solid Waste Authorities and Local Planning Issues

Solid waste handling includes management, storage, collection, diversion, transportation, treatment, use, processing, and final disposal. It is governed by the laws and regulations of federal, state, and local governments. The U.S. Congress has typically left issues relating to managing solid waste to state and local governments. In Washington State, statute gives primary authority to local government.

County governments develop policies and procedures to manage the municipal solid waste stream primarily through their local, comprehensive, solid waste management plans (CSWMP), as required by Chapter 70.95 RCW. Cities can choose to sign onto the county CSWMP, or they can create their own plans. State law also requires local planning jurisdictions to develop local hazardous waste management plans (RCW 70.105.220).

The local plans represent a cornerstone for reaching many of the Beyond Waste goals, as major investments, decisions, infrastructure, and programs must be consistent with them. Additionally, local plans must be complete and in good standing to receive grant monies from the Coordinated Prevention Grant (CPG) program, an important source of local funding for non-disposal-related programs and activities. Solid waste and hazardous waste planning at the local level can identify and plan for important investment and decision-making opportunities, such as for needed facilities and establishing service levels and programs offered to households and businesses. Ecology and others encourage and assist local jurisdictions to adopt and implement the Beyond Waste recommendations. This involves seeking opportunities to incorporate the Beyond Waste vision, goals, and recommendations into local solid waste and hazardous waste management plans.

It isn't realistic to expect all jurisdictions to take the exact same steps. Progress in each jurisdiction is different based on unique characteristics and needs of each area, including population, distance to recycling markets, existing infrastructure, and local economy. What is important, however, is a commitment to the Beyond Waste vision.

The Beyond Waste Plan is not mandated by law nor is it a regulation requiring specific actions. It's a combination of the state Solid Waste Plan and Hazardous Waste Plan updates, which state law does require and which guide the future management of solid and hazardous waste in Washington. Success relies on creating opportunities to advance plan goals through coordinated actions across the state. An important role for local and state government is to bring together partners with mutual interests to collaborate on implementation of the recommendations. Relying on leadership and action from the private, non-profit, and educational sectors, as well as from all levels of government, is essential to meaningful progress. The guidelines for local solid waste and hazardous waste planning have been or are being updated to ensure they reflect the Beyond Waste vision and goals, and provide local governments with ideas and opportunities.

Today's Reality

The role of state government is to set environmental protection standards for designing and operating disposal facilities, to provide competent technical advice to local governments and citizens, to regulate the garbage collection industry, and to coordinate the overall system. Ecology reviews locally issued permits and solid waste management plans, defines minimum functional standards for all types of solid waste facilities, and provides technical support and grants for waste reduction, recycling, and solid waste enforcement programs. Ecology also collects and tracks a wide array of data, which we publish in the Solid Waste Annual Report. (*www.ecy.wa.gov/programs/swfa/solidwastedata/report.asp*) Finally, Ecology supports and encourages the waste management priorities established in RCW 70.95, with waste reduction as the highest-priority waste management strategy, followed by recycling and responsible disposal.

Local governments have primary responsibility to manage solid waste. The counties, the jurisdictional health departments (JHD) and the cities share that responsibility. Statewide regulation of solid waste collection and the private hauling companies is delegated to the Washington Utilities and Transportation Commission (WUTC). Cities may choose to provide collection services themselves, or to contract for collection services.

Local health departments enforce environmental regulations. They do so by issuing permits for solid waste handling facilities and by regulating the operations of these facilities. They also enforce ordinances governing illegal dumping. Private companies play a major role in collecting and hauling solid waste, and in operating transfer stations, landfills, waste-to-energy, composting, and recycling facilities.

Moving toward the Beyond Waste vision entails carefully assessing opportunities to align responsibilities, regulatory structures, and planning and funding with the Beyond Waste priorities while meeting existing needs for services. It is also important to consider future needs and financial assurance mechanisms and other tools that maintain accountability. Equally important is the need for continued enforcement to preserve the integrity of the recycling and solid waste system, especially with regard to the illegal recycling and disposal practices that continue to occur. Washington's goals for the proper management of solid waste require that each individual recognize their role and responsibility in preserving our natural resources and protecting the environment and human health through their actions.

Goals: What Washington will look like in 30 years (by 2035)

Local plans and programs prioritize waste and toxics reduction.
Programs to reduce the volume and toxicity of waste are in place and effective throughout the state. Local planning promotes statewide infrastructure to convert waste to resources, and contribute to achieving Beyond Waste goals and recommendations.

The solid waste regulatory structure facilitates eliminating wastes and toxics.
The laws and rules governing solid waste management have been rewritten to accommodate a society where most wastes and toxics have been eliminated; those few wastes remaining are reused or safely managed.

Recommended Actions and Five-year Milestones

The recommendations listed below include actions that are critical to the overall success of Beyond Waste. The recommendations provide direction for the longer planning horizon, while the milestones will measure progress over the next five years.

Recommendation SW 1 — Encourage inclusion of Beyond Waste principles into local plans.

Continue to encourage local planning jurisdictions to revise or update their local Comprehensive Solid Waste Management Plans to incorporate Beyond Waste principles and actions.

Milestone SW A: Reducing the volume and toxicity of waste is a goal of all solid waste plans. At least 75 percent of planning jurisdictions have implemented activities in at least one initiative or issue area, and 50 percent of planning jurisdictions have implemented activities in two or more initiative or issue areas (green building, environmentally preferred purchasing, organics, etc.).

Recommendation SW 2 — Revise local planning guidelines

Revise the Guidelines for the Development of Local Solid Waste Plans as needed, and keep current to be reflective of the Beyond Waste Plan.

Milestone SW B: Solid waste planning guidelines are up to date and concurrent with the Beyond Waste vision, principles, and RCW 70.95.010.

Recommendation SW 3 — Expand assistance to local planning jurisdictions.

Ecology provides planning and technical assistance to incorporate Beyond Waste principles and actions into local plans, recognizing geographical and other site-specific challenges and opportunities.

Milestone SW C: Locals tap into well-trained and highly-skilled technical assistance staff proficient in planning, Beyond Waste priorities, and local issues and opportunities

Recommendation SW 4 — Collaborate with local governments.

Collaborate with local governments to use grant funding strategically. Encourage local governments to incorporate Beyond Waste principles and priorities into their plans and programs, and to implement the highest Beyond Waste priorities.

Milestone SW D: Incentives are built into the Coordinated Prevention Grant (CPG) program to leverage implementation of high-priority Beyond Waste projects, local plans that incorporate Beyond Waste, and transitioning planning jurisdictions towards the Beyond Waste vision.

Recommendation SW 5 — Ensure responsibilities are clear.

Ensure responsibilities and roles for solid waste planning and implementation are clear and aligned with the Beyond Waste principles. As a part of this effort, evaluate and consider the following:

- Identify potential authorities needed to carry out Beyond Waste priorities.
- Identify gaps and overlaps in authorities and responsibilities throughout the solid waste management system.
- With stakeholders, identify barriers in existing laws and regulations and propose solutions.

Milestone SW E: Solid waste laws and regulations are updated to support the Beyond Waste vision.

2. Waste Reduction, Recycling, and the Technical Nutrient Cycle

In 1989, Washington passed the Waste Not Washington Act, which established waste reduction as the highest priority for managing waste, followed by recycling, and responsible disposal. Waste reduction can be challenging to pursue and even harder to measure. But we know education is a necessary component of success. Furthermore, designing better products so there is less waste, less toxicity, and the materials can be reused or recycled indefinitely, is vital to recycling and reducing waste.

Design efforts can shift emphasis from end-of-pipe recycling of wastes to decreasing the entire life-cycle impacts (and increasing the uses) of products. This includes designing for disassembly and recycling, and designing products to reduce toxics and other contaminants. Products made with composite materials can be difficult to recycle, for example. Products containing toxic materials can pose risks in handling and processing for recycling. Also, many recovered materials are recycled today via "downcycling," such as paper recycled into tissues and plastic soda bottles recycled into park benches. This means that materials are used only one more time before they are disposed. Many "products" actually are packaging, a quickly discarded barrier between the product and the consumer. Packaging makes up an estimated 30 percent of the municipal solid waste stream, but less than half of all packaging is recycled. Great opportunities exist to design less wasteful and more sustainable packaging as well as products.

In addition to a closed-loop organics recycling system, a similar system for recycling technical materials (such as plastic, glass, and metal) is crucial to success of the Beyond Waste Plan. Ultimately, we should design products to enter either the organic or the technical nutrient cycles.

A technical nutrient cycle is one where non-organic materials can remain in a closed-loop of manufacture, reuse, and recovery, maintaining their value through many product life cycles. The products made from these technical nutrients can be further considered as "products of service" – stable products that are readily disassembled and remanufactured. In the product of service model, the consumer buys the service, as opposed to the product. The producer, manufacturer, or retailer retains responsibility for products and the component materials. This vision stems in part from work done by William McDonough and Michael Braungart, and leads to less waste, more recycling, and better use of our resources overall. You can find more information in their book *Cradle to Cradle: Remaking the Way We Make Things* (McDonough and Braungart, 2002) or on their website: *www.epea.com/english/cradle_methodology/nutrientcycles.htm*.

While we continue to support the recycling system and divert as much as possible to it, we must also plan for infrastructure to support and encourage even greater waste reduction and recycling in Washington.

Today's Reality

Municipal solid waste recycling is highly successful in Washington. Despite not reaching the legislative goal of a 50 percent recycling rate by 2007, the recycling rate for "traditional" materials (such as cans, bottles, and papers) climbed from 15 percent in 1986 to 43 percent in 2007. Equally important is the growth of recycling for other materials including asphalt, concrete, and other construction, demolition, and land-clearing materials. The "alternate" recycling rate for 2007 rises to 47 percent when these and other materials are added to the traditional recycled materials.

Recycling is a key foundation of all five initiatives, and vital to moving Beyond Waste. Much remains to be done to create a recycling system for the long-term that supports the Beyond Waste vision of viewing wastes as resources and reusing them as much as possible. Many successful programs are in place, such as recycling of cardboard, aluminum, metals, and some plastics. Construction and demolition debris recycling has risen significantly. Much of western Washington has established single stream recycling, where all recyclable materials are collected in one bin. This easy to use system can result in higher collection rates. But new systems that can efficiently recover a wider range of materials for reuse with a minimum of downcycling also need to be established.

In addition to all the other benefits to found in recycling, such as increased jobs and resource conservation, recycling is a key strategy to reduce greenhouse gas emissions. Manufacturing from recycled, as opposed to virgin, materials typically uses far less energy and therefore creates less greenhouse gas emissions. Waste that is never produced saves further still, so waste reduction is an even more powerful tool to avoid greenhouse gas emissions.

Interwoven throughout the Beyond Waste Plan are recommendations for increased recycling and waste reduction through state government purchasing, infrastructure, local planning, incentives and price signals, education, technical assistance, performance measures, and other actions. These efforts are essential to maintain the current recycling system and to move toward a comprehensive waste reduction and recycling system.

Goals: What Washington will look like in 30 years (by 2035)

The 30-year goal for the waste reduction and recycling system in Washington is as follows:

Materials in the technical nutrient cycle are continually recycled in closed-loop systems.

Products are made from durable, non-toxic materials that are efficiently collected and responsibly remanufactured into more products. Unintended waste from products and packaging has been virtually eliminated.

Recommended Actions and Five-year Milestones

The recommendations provide detailed activities to help achieve waste reduction and a working technical nutrient cycle in Washington. The milestones will measure progress over the next five years.

Recommendation SW 6 — Characterize Washington's solid waste streams.

Characterize Washington's solid waste streams including municipal solid waste, agricultural, industrial, commercial, and institutional wastes to better understand and anticipate opportunities for recycling. Complete regular statewide waste characterization studies, and incorporate studies done at the local level.

Milestone SW F: A waste characterization study is completed every four years. State studies are coordinated with waste characterization studies done at the local level. (Same as DATA B)

Recommendation SW 7 — Plan for a stronger recycling system and technical nutrient cycle, including promoting local manufacturing with recycled feedstock.

Use a collaborative approach to enhance current recycling and begin a stronger technical recycling system for the future. One way to strengthen the current system is to focus on optimizing paper and other recycling from commercial and residential sources. State and local governments should be an easy starting point for this venture, followed eventually by all communities in the state that have the population and infrastructure to support enhanced recycling efforts.

The eventual aim is to design products for reuse and recycling in the technical closed-loop cycle (manufacture, reuse, and recovery). This must include projecting and planning for infrastructure needs to support increased recycling and reuse of technical materials. We need to expand local markets and recycling businesses, increase demand for products designed for recycling, and use incentives and price signals to increase recycling of technical cycle materials.

By making manufacturers more responsible for end-of-life management of their products, stewardship efforts play a key role in improving the technical recycling system. As part of extended producer responsibility efforts, explore shared funding mechanisms to collect materials and stimulate recycling.

An additional intent of this effort is to increase focus on re-manufacturing. Re-manufacturing means to repair or rebuild a used product into a new or different product, extending the useful life of the original product. This will not only help move us Beyond Waste, but will also create more green jobs and reduce greenhouse gas emissions.

Milestone SW G: A strategy is in place for strengthening the technical nutrient cycle. This supports sustainable products, producer responsibility, and a sustainable economy. Action for developing the strategy may include:

- Develop maps of infrastructure, markets, and recyclable commodities flow.
- Develop incentives to promote local manufacturing using recycled feedstock. This could include addressing product versus waste issues.
- Consider financing mechanisms that will support increased collection and cradle-to-cradle use of commodities.

- Support product stewardship efforts for cradle-to-cradle use of materials in products.
- Create a "wasteshed" with the goal of diversifying our recyclable commodities markets and utilizing 75 percent of traditional recyclables in the region.
- Consider regional solutions to material reuse.
- Devote more attention to large generators of product waste (institutions, industries, etc).
- Work collaboratively with stakeholders to address challenging materials, such as glass, plastics, and bio-based plastics.

Milestone SW H: All state agencies and other governments recycle.

Milestone SW I: Statewide recycling is standard practice for commercial and residential generators, supported by efficient collection and increased infrastructure.

Recommendation SW 8 — Encourage manufacturers, retailers, and other businesses to reduce packaging materials and wastes.

Collaborate with retailers and manufacturers with a large presence in Washington to reduce product packaging. Work towards a memorandum of agreement between the state and participating retailers and manufacturers to reduce product packaging and support sustainable packaging principles. Support and build upon existing efforts by retailers, manufacturers, and others to catalyze actions with significant potential impacts.

Milestone SW J: An agreement is reached with major retailer organizations in the state to establish sustainable packaging guidelines and packaging reduction strategies.

Recommendation SW 9 — Educate the public and businesses on the benefits and practice of waste reduction and recycling.

Maximize the effectiveness of education efforts. Emphasize the benefits of recycling and reduction to avoid greenhouse gas creation. Analyze and improve utilization of existing education programs. Coordinate with local government efforts and propagate the most effective strategies and programs. Strengthen educational programs and strive for consistent messages that spread the Beyond Waste vision. When possible, use grants to leverage education messages.

Milestone SW K: Education efforts that promote waste reduction and recycling are in place and complement local and regional efforts. The relationship to greenhouse gases is emphasized.

3. Disposal—Yesterday, Today, and Tomorrow

You can access a detailed Background Paper from 2004 on the disposal of solid waste, including all appropriate citations, at *http://www.ecy.wa.gov/biblio/0407031.html*.

Disposal of solid waste in landfills and incinerators continues to be a critical element of Washington's system of managing solid waste. The Beyond Waste initiatives will reduce reliance on disposal, but disposal facilities will remain a reality in the future. This section describes some important issues that surround solid waste disposal and sets forth short- and long-term recommendations.

Today's Reality

Solid waste disposal has become much safer and far more protective of health, habitat, and natural resources than in the past 30 or 40 years. Most landfills are now built with liners to contain leachate, and have gas

collection systems. The gas is frequently used for energy. Despite these improvements, landfills can still affect the air with methane or other gases generated by decomposing waste, and can still cause pollution problems in groundwater and surface water.

In 2007, more than 5.7 million tons of municipal solid waste was disposed of in Washington. A small amount (6 percent) was disposed of at one of three energy recovery/incineration facilities, but most municipal solid waste in Washington is disposed in landfills. There are 14 operating landfills in the state, three of which took in more than 4 million tons in 2007. One major landfill takes in waste from 26 of the 39 counties. In addition, nine counties and the state's largest city send waste to Oregon for disposal. It is important to consider the effects of long-distance transport of wastes, particularly in regards to greenhouse gas emissions.

The price of disposal should incorporate the costs of meeting existing regulatory requirements. For landfills, this includes not only operational costs, but also monies to cover facility closure and post-closure monitoring activities. In addition, charges for disposal are intended to include potential costs of cleanup from environmental degradation that could result from the facility. However, these costs are not always anticipated and included in disposal fees charged today.

Many former landfills and dumps have closed or been abandoned over the years. Hundreds of these sites have not been addressed at all, for a variety of reasons. We need to identify these sites and address their environmental problems.

Goals: What Washington will look like in 30 years (by 2035)

The 30-year goals for the solid waste disposal system in Washington as we strive toward the Beyond Waste vision are:

Closed landfills are addressed.

Yesterday's landfills no longer pose threats; many are redeveloped and are vital community assets.

Landfills fully meet compliance requirements.

Landfills and other disposal facilities do not cause problems. The few problems that may come up are contained, addressed, and cleaned up to prevent further degradation and to protect human health. The property owners and waste disposers pay costs for needed actions.

Facilities are state of the art.

The very small amount of waste that is not recoverable is disposed of at state-of-the-art facilities, and collection and disposal have minimal impacts. These facilities are sited and operated to pose no threats to human health or the environment.

Disposed materials are recovered.

Disposal facilities have been mined to recover resource materials for recycling. Disposal occurs in such a way that, where feasible, disposed materials can be recovered later.

Recommended Actions and Five-year Milestones

The recommendations (organized into three categories) provide detailed activities to reach the 30-year goals described above. The milestones will measure progress over the next five years.

For Closed and Abandoned Solid Waste Landfills

Recommendation SW 10 — Identify closed and abandoned landfills statewide.

Inventory and track closed and abandoned landfills. Ensure that property owners with potential or confirmed former sites are notified. Specific steps include:

- Establish an agreed-upon process to identify closed and abandoned solid waste landfills throughout the state.
- Develop an inventory of all identified sites.
- Notify property owners of those sites to verify locations.
- Establish property identification procedures.

Milestone SW L: All jurisdictional health departments complete inventories of closed and abandoned landfills.

Milestone SW M: Closed and abandoned landfills are marked on official records, and all property owners are notified.

Recommendation SW 11 — Evaluate and prioritize problems at closed and abandoned landfills.

Establish an approach, schedule, and process for evaluating and prioritizing action at identified sites. Specific steps are:

- Develop an agreed-upon process to informally evaluate and prioritize the sites identified through the inventory.
- Evaluate the sites and prioritize them for cleanup or other actions.

Milestone SW N: Jurisdictional health departments developed lists of prioritized closed and abandoned landfills and their problems.

Recommendation SW 12 — Develop feasible and responsible processes for addressing priority closed and abandoned landfills.

Take steps to encourage needed action on closed and abandoned solid waste landfills. This should include addressing sites through existing cleanup programs, where appropriate. This may also include developing additional options for addressing sites with minimal problems, or sites that fall outside the scope of existing cleanup programs.

- Explore opportunities to develop approaches that are more flexible to address closed and abandoned landfills.
- Consider designing and implementing state/local government pilot projects that address a category or group of sites to more efficiently and cost-effectively resolve issues at similar sites.

Milestones SW O: Processes for addressing priority closed and abandoned landfills are developed with at least one pilot cleanup site underway.

Recommendation SW 13 — Identify funding to address priority closed and abandoned landfills.

Develop cost estimates for the highest priority sites, and identify funding options to pay for the needed corrective action. Specific steps include:

- Conduct an evaluation of the existing state grant programs to identify potential funding options.

- Review the potential of other public funding options (for example, new revenue sources, Brownfields programs, existing grant funds, local revenue options, etc.) and public-private partnerships.
- Develop mechanisms for government to partner with developers and property owners to clean up old landfill sites and use them for community benefit.

Milestones SW P: Cost estimates for addressing highest-priority closed and abandoned cleanup sites are developed, along with a list of funding options.

For Existing Disposal Facilities

Recommendation SW 14 — Ensure that existing disposal facilities comply with requirements.

Evaluate statewide compliance with all regulatory requirements at disposal facilities and establish a plan to ensure regular statewide monitoring and assistance. Specific steps include:

- Assess statewide compliance of disposal facilities and develop a plan to ensure that facilities receive adequate technical assistance to continue meeting all requirements conditions in their solid waste permits.
- Work to close existing landfills or landfill cells that are inadequate and encourage replacement, as needed, with better-designed and constructed facilities.
- Ensure adequate closure and post-closure funds remain in place for the short and long term and regularly monitor closure/post-closure permits.
- Gather data to begin anticipating trends and needs for future cleanup.

Milestone SW Q: Regulators conduct evaluation of compliance and financial assurance on a regular basis. Action plans are in place to bring facilities into compliance.

For the Future

Recommendation SW 15 — Continually reduce disposal impacts on human health and the environment. Coordinate with efforts on climate change, Puget Sound and other Washington waters, and reducing toxic threats work.

Ensure that disposal facilities, including waste-to-energy facilities, do not pose threats to human health and the environment by reducing the toxicity of disposed wastes and by closely monitoring and continually improving operation, closure, and post-closure practices over time. Specific steps include:

- Address emerging disposal impacts of both new and existing materials.
- Develop a long-term strategy to ensure that disposal fees reflect complete costs and that no costs (such as future cleanup) are passed on to future generations.
- Establish a schedule to regularly assess disposal facility requirements and propose changes, as needed, to ensure adequate public health and environmental protection.
- Have a regularly updated inventory of infrastructure for waste disposal and transfer, including environmental impacts.
- Incorporate into local plans the goal of minimizing impacts of waste disposal and transfer.

Milestones SW R: Research and recommendations on long-term waste disposal and transfer impacts and requirements is ongoing.

4. Financing Solid Waste for the Future

You can access the 2004 Background Paper on *Financing Solid Waste for the Future*, including all appropriate citations, at *www.ecy.wa.gov/biblio/0407032.html*.

Washington's present solid waste system is remarkably successful in many ways. This success is due to the people involved and the relationships they have developed over the years. Ecology is fortunate to have great partners in local government (health jurisdictions and solid waste divisions), the private sector (haulers, recyclers, composters, landfill owners), state government (Washington Utilities and Transportation Commission, Department of Health), and others. While we envision changes to achieve the Beyond Waste vision, we see no reason that the current list of partners and some future partners, such as manufacturers, will not be successful in getting there. Together, we have made great strides to move from open burning dumps to our system of modern solid waste facilities. We can make similar strides to implement Beyond Waste. We will continue to partner and grow – including working to ensure equitable, sufficient, and effective financing for the system.

It is essential to support the existing successful system through the transition toward a Beyond Waste future. The private and public solid waste infrastructure has shown various levels of its ability to expand and diversify in response to changing demands of the marketplace, changing technologies, and evolving policies. The infrastructure shows this flexibility in the range of materials collected for reuse and recycling, which previously were sent to disposal.

Business and government investment at all levels will be needed to meet Beyond Waste goals. Achieving large increases in waste reduction and closed-loop recycling will require extensive technical assistance, education, planning, and collaboration. We should seek ways in which financing structures can reinforce rather than work against Beyond Waste goals. For example, there are regional and national efforts to shift from charging fees at the end-of-life (disposal fees) to incorporating costs at more appropriate points in the life cycle (such as cost internalization, where product life cycle costs are shared by participants in the product life cycle). Supporting these efforts could be a key benefit for the long term. The electronics product stewardship program is the first big step in this direction.

Continuing to move recycling toward greater cost-effectiveness is also important. If the demand for recyclable materials and recycled-content products significantly improves and if sales of recyclable materials can cover all the costs, then solving funding challenges could be easier. This could occur through development of technology, use of state and local government purchasing power, and other means.

Today's Reality

Washington's current solid waste system consists of a number of programs, services, and activities provided to residents, businesses, and organizations by the solid waste industry, manufacturers, counties, cities, state government, the federal government, and various non-governmental organizations. These activities primarily aim at managing wastes in the municipal solid waste stream. Agricultural, industrial, and large institutional settings generate large quantities of waste, which are not generally included in the municipal solid waste stream.

We completed a study on solid waste cost flows during the first five years of the plan. Solid waste represents at least $2 billion in annual cost flows (data from 2005). Even before the economic downturn of 2008 and 2009, some jurisdictions experienced shortfalls of income due to decreasing amounts of waste disposal. A sustainable management system needs alternate funding strategies.

One goal of the Beyond Waste effort is to have costs of a product's complete life cycle incorporated into product pricing (cost internalization), which can occur in various ways. This goal's focus ultimately lies in creating products in ways that conserve natural resources, minimize waste, are compatible with biological processes, and limit the use of materials that create significant negative impacts on the ecosystem.

Incorporating external costs will affect pricing signals in the market in such a way that costs will reflect what is and what is not sustainable.

This perspective on accounting for costs and setting prices has been successful elsewhere, such as Europe and Canada. It does not imply a one-way street of additional expenses, and has many benefits. Less pollution means reduced health problems and cleanup costs. Eliminating artificial subsidies can result in reduced use of resources. Actions that result in more "green jobs" produce economic benefits of their own. Investing in the Beyond Waste future can reduce costs and liabilities for businesses, open new markets, and maintain economic vitality while simultaneously reducing negative environmental impacts. A healthier and more sustainable environment benefits every person in Washington. This needs some up-front expenses to realize long-term environmental, health, and societal gains. But some of these actions and investments may bring economic gains quickly.

As we take action and make progress toward achieving the Beyond Waste goals, a stable and long-term financing system must be in place to ensure the delivery of solid waste programs. These mechanisms must have the flexibility to meet the needs of urban and rural areas of Washington. It isn't possible to anticipate fully what we will need in the coming decades. Performance indicators and regular evaluation will help to determine next steps along the way. Entities involved in the current system (WUTC, local governments, haulers, recyclers, Ecology, and others) should discuss and consider the following actions:

- Continue to promote all facets of product stewardship, including product and process redesign, take-back, and leasing services instead of owning products.
- Continue to ensure that incentives to encourage more sustainable behaviors are maintained.
- Incorporate the complete costs of solid waste collection and disposal into the prices charged for them.

Goals: What Washington will look like in 30 years (by 2035)

The 30-year goal for financing solid waste for the future is:

A stable and long-term solid waste financing system is in place that supports and enables the transition to Beyond Waste.
Full costs for managing product life cycles, materials, and wastes are accounted for in both disposal and product prices. Funding for waste reduction and recycling programs is not reliant on waste disposal fees.

Recommended Actions and Five-year Milestones

It is important to ensure reliable and adequate funding for all elements of the solid waste system, including reduction and recycling, as we implement Beyond Waste. Therefore, financing mechanisms for solid waste infrastructure, services, programs, and activities must be evaluated regularly. Long-range financing goals and potential actions for working toward them must be articulated.

Recommendation SW 16 — Evaluate financing for the solid waste system, including moving toward Beyond Waste, in consultation with the SWAC and interested parties.

Conduct evaluations of how solid waste is financed currently, and the extent to which needs can be met. Ongoing evaluations should be conducted as needed, but at least every five years. The state Solid Waste Advisory Committee (SWAC) (or other similar group) should play a key role in monitoring the solid waste financing situation, and should alert Ecology when discussions and evaluations are needed. These evaluations should be done in collaboration with key stakeholders of the solid waste system, and parties (of differing perspectives), including, but not limited to local governments, business, industry, citizens, the

Washington Utilities and Transportation Commission, and elected officials. When discussions addressing specific waste streams are called for, stakeholders having a particular interest in such materials or products should be identified and encouraged to participate.

Continued research will focus on:

- Evaluating the extent to which the existing financing mechanisms will be able to cover the identifiable costs to implement Beyond Waste effectively and determine whether changes are needed.
- Examining a range of potential financing mechanisms and other actions, if needed, and collaboratively working to inform and educate all parties, and implement successful options.
- Evaluating options for moving from end-of-life financing to up-front financing.
- Evaluating current opportunities to incorporate complete cost models into solid waste system decision making.
- Identifying regulatory barriers that may need to be addressed.
- Expanding partnerships: non-governmental organizations and the business sector can fund and carry out some needs.
- Working toward the elimination of subsidies, tax breaks, and incentives that serve to encourage waste generation and toxic substance use. Replace with incentives to reduce wastes, use fewer resources, reduce use of toxic substances, and reduce overall environmental footprints.

As part of the evaluation, consider the following potential actions to help move toward a long-term Beyond Waste future:

- While continuing to rely on user fees to fund solid waste programs and services, begin shifting from predominantly end-of-life fees (such as disposal fees) to up-front fees (such as cost internalization) where practical opportunities exist.
- Begin incorporating complete cost and benefit models into solid waste system decision making.
- Most solid waste management decisions are based on traditional cost-benefit analysis. More informed decisions can be made by incorporating external costs not captured by current accounting practices.
- Life-Cycle Assessment (LCA) can be used to evaluate traditional (internal) costs and benefits as well as external costs and benefits. LCA is a policy tool that provides a way to connect solid waste practices and policy to sustainability.

Milestones SW S: A report is developed with the state SWAC, or other similar group, providing options and recommendations for financing the solid waste system in support of the Beyond Waste vision.

Implementation strategies for this section can be found on page 74.

5. The Solid Waste System in Washington Today

An additional Background Paper from 2004 was developed in collaboration with the state Solid Waste Advisory Committee. You can access this paper through the Beyond Waste Web site or at *www.ecy.wa.gov/biblio/0407033.html*. It provides a "snapshot" in time, describing solid waste management in Washington when the original plan was written (2004). It does not contain recommendations, nor draw conclusions. This paper is intended to serve as a reference for the Beyond Waste Plan. It is also intended to enhance the information published by Ecology in its annual status report on solid waste in Washington, which can be accessed at *www.ecy.wa.gov/programs/swfa/solidwastedata/report.asp*.

Beyond Waste Implementation Plan

NOTE: Some milestones and recommendations are abbreviated for this table to save space.

Initiative: Moving Beyond Waste with Industries			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
IND 1: Modify the P2 Planning program to dovetail with the Beyond Waste vision.	IND A: Most P2 plans comprehensively address hazardous substance use.	Implement sector campaigns (IND 9) and the TRAC (*www.ecy.wa.gov/biblio/0804029.html*) report (IND 12). Eliminate or minimize the most toxic chemicals. The focus of first sector campaign will be on toxic metals, especially lead, with the P2 planners.	DATA 1 DATA 2 HW 1, HW 2 HW 3, HW 4
IND 2: Expand information on Ecology's Web site.	IND B: The HWTR program Web site includes more information about best management practices, including alternatives for key wastes and substances.	Highest priorities for this on-going work will be to tie in Web updates with sector campaigns, add compliance information that substitutes for Dangerous Waste workshops, and include safer alternatives to toxics.	ORG DATA 1 DATA 2 DATA 4 HW 6
IND 3: Put in place several Beyond Waste incentives.	IND C: Several incentives are in place to help implement Beyond Waste…	Using previous research, emphasize implementing incentives that tie into existing projects such as Envirostars (*www.envirostars.org/*) sector campaigns, and implementation of TRAC (*www.ecy.wa.gov/biblio/0804029.html*) recommendations (IND 12). Partners will likely include local government and P2 planners, depending on incentives.	GB 1 GB 3 GB 7
IND 4: Encourage new businesses to adopt sustainability practices.	IND D: Most of the major new businesses locating to Washington State incorporate more sustainable practices.	Provide technical assistance and support to the Department of Commerce and others when requested.	MRW 7 ORG 4 ORG 6 GB 7
IND 5: Encourage waste handlers… to become materials brokers.	IND E: Hazardous waste handlers… have taken noticeable steps toward becoming brokers of materials.	Continue to promote the By-Product Synergy Project (*www.pprc.org/synergy/*) with staff support, TA and, when feasible, grants.	GB 4 HW 11 SW 7
IND 6: Support EPA's "Beyond Waste-type" efforts.	IND F: EPA and Ecology work together to implement Beyond Waste.	Encourage EPA to focus on support for Beyond Waste-type activities with its grants, programs, and strategy development.	DATA 1 DATA 4
IND 7: Promote sustainability in product development.	IND G: A strategy is developed and agreed to for moving forward and at least one project is under way to promote sustainable product design.	This will remain a low priority until more momentum develops. One idea under discussion is product specification development. A past effort, using the lean manufacturing project (*www.ecy.wa.gov/programs/hwtr/lean/index.html*) to redesign existing products, did not succeed. Despite marketing efforts, no one wanted to participate.	MRW 4 ORG 6 GB 4 GB7 SW 7

Initiative: Moving Beyond Waste with Industries			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
IND 8: Eliminate or minimize groups of the most toxic chemicals as part of Ecology's reducing toxic threats work. (same as MRW 1)	IND H: Multiple states have agreed on a chemical assessment protocol to identify safer alternatives to priority chemicals. Safer alternatives are identified for 10 priority chemicals. (same as MRW A)	This is one of the agency's top priorities. Start implementing the Children's Safe Products Act (CSPA) (*www.ecy.wa.gov/programs/swfa/cspa/*) by developing a list of chemicals of high concern for children. Then develop a protocol to assess alternatives and adopt rules to require manufacturers to report on their use of these chemicals. Assess the need for additional authority to make more reductions in the use of toxics in products. Encourage manufacturers to use the chemical assessment protocol to identify safer alternatives for at least 10 priority chemicals. Encourage the development of green chemistry curricula in higher education. Conduct sector campaigns on safer alternatives, with the first one on alternatives to metals. Partners include NGOs, health professionals, manufacturers of children's products, other states with similar laws, and P2 planners.	MRW 1 MRW 3 MRW 7 MRW 8 MRW11/ IND14 MRW 12 DATA 5 HW 1 HW 7 SW 5
IND 9: Use the sector approach as the framework to help implement the agency's initiatives.	IND I: Government is leading by example, with significantly less waste generation and less use of toxic substances at the local, state, and federal levels. IND J: At least two successful sector campaigns that reduce greenhouse gases, toxics in products. and/or toxic releases going into Puget Sound and other Washington waters are complete.	This is one of HWTR top priorities. Assist state agencies to implement the Governor's executive orders on sustainability, providing EPP technical assistance and encouraging government at all levels to participate in sector campaigns. The first planned sector campaign will likely focus on reducing the use of toxic metals and using safer alternatives. The second sector campaign may focus on using safer alternatives to existing solvents and/or PAHs (polycyclic aromatic hydrocarbons). Partners include P2 planners, state agencies, local government, and business associations.	MRW 2 MRW 3 MRW 5 MRW 6 MRW 7 ORG 1 GB 2 HW 1 HW 7 HW 9
IND 10: Support the creation of green jobs and a green economy while emphasizing ways to reduce the use of toxic chemicals and wastes.	IND K: The Governor's strategy on creating green jobs and a green economy for Washington State includes ways to minimize toxics and wastes.	Support the Governor's and President's efforts in this area when appropriate.	ORG 2 ORG 3 ORG 4 GB 1 GB 2 GB 4 GB 5 HW 4 DATA 5 SW 8

Initiative: Moving Beyond Waste with Industries			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
IND 11: Help to minimize the release of toxics into stormwater.	IND L: An effective strategy exists which minimizes toxics in stormwater. Ecology's HWTR, W2R and WQ programs coordinate efforts for managing toxic chemicals in stormwater.	Ties in with Local Source Control (*www.ecy.wa.gov/programs/hwtr/lsp/index.html*), Urban Waters (*www.ecy.wa.gov/urbanwaters/index.html*) and chemicals of concern work. Continue to provide more technical assistance and information on prevention and management of stormwater. Complete stormwater demonstration project. Use data to help design any future TA and outreach efforts. Identify safer alternatives to highest-priority pollutant sources for Puget Sound, based in part on toxics loading study and Puget Sound stormwater strategy. Partners include Puget Sound Partnership, local government, community groups, and businesses.	ORG 1 ORG 6 GB 2 HW 5 HW 6
IND 12: Implement the Toxic Reduction Advisory Committee (TRAC) recommendations.	IND M: The majority of the TRAC recommendations are implemented. (*www.ecy.wa.gov/pubs/0804029.pdf*)	Focus on implementing low-cost recommendations with primary emphasis on eliminating/minimizing the most toxic chemicals at first while continuing to promote changes to the statute. Regulations will be modified after statute changes are adopted. Partners include P2 planners and TRAC advisory committee members.	HW 1 HW 2 HW 3 HW 4
IND 13: Support product stewardship legislation and EPP legislation as recommended by the Governor's Climate Action Team.	IND N: A statewide product stewardship framework is in place and three or more new products are included… IND O: Legislation is modified to support more EPP, a program to track EPP purchases is in place, and sales of EPP goods and services are increasing. (same as MRW I)	Seek or support legislation to promote EPP and require tracking of EPP purchases (2011 at the earliest). See MRW 7 for more details on EPP implementation. Act on the CAT recommendations (*www.ecy.wa.gov/climatechange/2008CAT_overview.htm*) and assist other organizations promoting product stewardship and EPP legislation with research and legislative support. Work closely with GA (on EPP) and local government on legislation.	MRW 2 MRW 6 MRW 7 ORG 1 ORG 5 GB 7 SW 5 SW 7 SW 8
IND 14: Educate the public and businesses on prevention, proper use, storage and disposal of hazardous products and wastes. Encourage safer alternatives to minimize toxic threats, especially to vulnerable populations. (same as MRW 11)	IND P: Statewide education to limit toxic threats is in place and complements local and regional efforts. (same as MRW M) IND Q: Fewer toxic products are purchased, misused, and disposed of improperly. The public is more aware of which chemicals are in products. (same as MRW N)	Provide educational assistance to local governments, businesses, individuals, households, schools, and community groups, including a toll-free citizen hotline. Integrate sector campaigns into educational efforts. Provide educational materials applicable to and easily replicated by local governments. Determine the environmental impact of common household toxic chemicals. Direct grant funds toward these educational efforts. Partners include Puget Sound Partnership and NGOs.	MRW 1 MRW 5 MRW 7 MRW 8 MRW 12 ORG 3 DATA 4 HW 5 SW 9

Initiative: Reducing Small Volume Hazardous Materials and Wastes			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
MRW 1: Same as IND 8	MRW A: Same as IND H	SEE INDUSTRIES 8	See IND 8
MRW 2: Reduce threats from mercury.	MRW B: Product stewardship systems for fluorescent and other mercury-containing lamps, mercury thermostats, and other mercury-containing devices are in place. Mercury in biosolids continues to diminish. IND R: The WA State Mercury Plan (*www.ecy.wa.gov/biblio/0303001.html*) has been fully implemented for hospitals, auto switches, and lamps. A national repository for mercury is in place, resulting in significantly less mercury in the environment.	Report to the Legislature on methods to collect and safely manage mercury from CFLs by December 2009. Continue to collect mercury from auto switches. Address the possibility of a permanent national mercury repository. Use CPG and PPG to collect mercury and reduce mercury product use. Partner with NGOs, local government, CFL manufacturers.	IND 9 IND 13 SW 5
MRW 3: Reduce threats from PBTs (Persistent Bio-accumulative Toxins).	MRW C: The Lead Chemical Action Plan (CAP) (*www.ecy.wa.gov/biblio/0907008.html*) is implemented and additional work is being done on other PBTs.	Develop legislation to address legacy lead paint (fall 2009). Implement lead wheel weight bill (January 2011). Complete a chemical action plan (CAP) for polycyclic-aromatic hydrocarbons (PAHs) (fall 2011). Complete a CAP for perfluoro-octane sulfonates (PFOS) (Begin in Spring 2012). Update the PBT rule and refine the list of PBTs (Spring 2013). Partners include DOH, Commerce, L&I, WDFW, local health departments, realtors, landlords, and NGOs.	IND 8 IND 9 HW 1 HW 7
MRW 4: Develop a more comprehensive list of covered electronics through a product stewardship infrastructure.	MRW D: The scope of electronic products covered by the existing producer-provided program is expanded beyond the current four categories (TVs, computers, computer monitors, and laptops).	The first priority is to oversee the current collection program. After 2010, explore expanding coverage to products that meet the definitions in the existing rules; seek or support legislation to expand coverage to products that do not meet the current definition. Partners include the MMFA (*www.wmmfa.net/*), electronics manufacturers, NGOs, and local governments.	IND 7 IND 13 DATA 1 DATA 3 SW 5 SW 7

Initiative: Reducing Small Volume Hazardous Materials and Wastes			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
MRW 5: Reduce the use of high-risk pesticides, emphasize proper use, and encourage effective alternatives.	MRW E: The amount of high-risk, non-agricultural pesticides found in urban waters has decreased. MRW F: Use of non-agriculture pesticide alternatives and lower-risk pesticides has increased, as indicated by shelf surveys or other methods. MRW G: The number of school districts, municipalities and other government entities using integrated pest management (IPM) and other alternatives has increased. IPM programs stress preventive pest control with pesticides used as a last resort.	Gather residential pesticide metrics currently available to establish a measurement of pesticide purchase and/or use (summer 2010). Track environmental trends using Ecology or other available data. Track use of IPM or other pest management strategies statewide, especially in schools (2011). Based on the schools' effort, develop a strategy to reduce the use of non-agricultural pesticides (2012). Share Natural Yard Care and other educational materials produced by the Washington Waters Campaign with local governments (2009). Leverage these tasks through CPG and PPG funds. Include pesticides in the evaluation and identification of MRW priorities in MRW 8 and 12 (2011). Partners are DOA, EPA, DOH, local governments, local school districts, CPG and PPG grant recipients.	IND 9 IND 13 IND 14 ORG 1 ORG 3 ORG 5 GB 2 DATA 5
MRW 6: Reduce and manage all architectural paint wastes.	MRW H: An industry-provided management system for leftover paint is created through the passage of paint product stewardship legislation or product stewardship framework legislation that includes paint.	Track the development of paint product stewardship efforts in other jurisdictions (ongoing). Support the passage of a paint product steward-ship bill as the opportunity arises. Promote paint recycling efforts statewide, along with the use of recycled paint (ongoing). Work with partners to develop, set, and evaluate performance measures in WA (2010). Partner with local governments, paint retailers, and manufacturers.	IND 9 IND 13 GB 4 DATA 1 DATA 3 SW 5 SW 7
MRW 7: Implement and promote Environmentally Preferable Purchasing at state and local governments and in institutional settings, with Ecology leading by example. Support the Climate Action Team proposals and other initiatives.	MRW I: Legislation is modified to support more environmentally preferred purchasing, a program to track EPP purchases is in place, and sales of EPP goods and services are increasing (same as IND O).	Seek or support legislation to promote EPP and require tracking of EP purchases (for 2011 legislative session at the earliest). Continue to provide technical assistance to encourage agencies and local governments to adopt EPP principles and practices. Align EPP targeted products with agency priorities to address climate change and reduce toxic threats (ongoing). Act on the CAT (*www.ecy.wa.gov/climate change/2008CATdocs/ltw_app_v2.pdf*) recommendations and assist other organizations promoting EPP legislation with research and legislative support (ongoing). Continue to support efforts to track EP purchases. Link EPP priorities to the next proposed sector campaign. Focus on products where known safer alternatives exist (starting in 2010). Analyze, promote, and support quality independent third-party certification systems. Leverage EPP through CPG and PPG funds. Partners include GA, other state agencies, local governments, other political subdivisions, and some businesses.	IND 8 IND 9 IND 13 IND 14 ORG 1 ORG 3 ORG 5 GB 5 GB 7 DATA 5 SW 1 SW 7

Initiative: Reducing Small Volume Hazardous Materials and Wastes			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
MRW 8: Ensure MRW and hazardous substances are regulated and managed according to hazards, toxicity, and risk.	MRW J: Ecology staff has researched regulatory change strategies for preventing threats from MRW and hazardous substances. The agency is moving in the recommended direction. Along with Ecology, local governments focus on preventing threats from MRW.	Evaluate existing statutes and regulations to ensure we are managing currently produced wastes according to hazards, toxicity, and risk. Also, evaluate how laws promote prevention of hazardous substances and risky wastes. Analyze approaches used by others to reduce MRW and hazardous substance generation including green chemistry and product stewardship strategies (2010). Identify and seek needed regulatory and statutory changes to solid and hazardous waste laws for effective prevention (2011). Local government and private hazardous waste handlers are partners.	IND 8 IND 14 SW 5 HW 1 HW 7 HW 9 SW 16
MRW 9: Support full implementation of local hazardous waste plans.	MRW K: Local hazardous waste plans are up to date and being fully implemented in accordance with Chapter 70.105 RCW and the new local hazardous waste planning guidelines. Full implementation includes all six required program elements…	Provide comprehensive and timely review of local plans. Focus technical assistance on waste reduction rather than waste management, in partnership with local governments. Leverage and support comprehensive planning at the local level through CPG funds. This is an ongoing task.	SW 1 SW 2
MRW 10: Ensure businesses and facilities handling MRW comply with environmental laws and regulations. Encourage as much reuse and recycling of MRW as possible.	MRW L: MRW Facilities, including treatment, storage and disposal facilities separately handling MRW, comply with Chapter 173-350 WAC. The facilities reuse or recycle an increasing proportion of MRW.	Provide technical assistance to local governments. Review MRW permits and hazardous waste plans. Target facilities needing to be upgraded using CPG funding. Inspect and audit facilities. This is all ongoing work. Partners include local government and private hazardous waste handlers.	HW 6 HW 8 HW 11 SW 3 SW 7 SW 14
MRW 11: Same as IND 14	MRW M: Same as IND P MRW N: Same as IND Q	SEE INDUSTRIES 14	See IND 14
MRW 12: Develop and implement a strategy for a more regionally focused MRW program by evaluating the most significant threats and effective approaches, including safer alternatives, to reducing those threats.	MRW O: A regional MRW strategy based on existing and new studies is developed and being implemented.	Assess what we now know about MRW generation in WA using existing reports and research (2010). Identify the most significant threats, effective approaches, and safer alternatives (2010). Develop and implement a long-term strategy to reduce generation and improve management of MRW (2012). Local government is a key partner.	IND 8 DATA 1 HW 7 SW 6

Initiative: Increasing Recycling for Organic Materials			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
ORG 1: Lead by example in government.	ORG E: Most people (government, business and the public) understand the benefits of healthy soils. ORG J: Organics recovery (including landscaping and food scraps) occurs in 50 percent of all state and local government buildings and institutions, including the Capital Campus. State, local agencies, and institutions are required to use compost as landscape management tool to reduce water and pesticide use. ORG M: Food waste prevention is a focus of state and local government. This includes edible food recovery for redistribution to organizations serving hungry people and food waste prevention programs at the residential, commercial, and institutional level. Work will be supported by a guidance document developed by Ecology.	Lead by example. Adopt integrated pest management to maintain landscapes. Promote healthy soils and EPP through purchase of recycled organic products from compliant, permitted, and exempt facilities. Starting points include research and development of a guidance document on food waste prevention. Partners are other agencies and local governments.	IND 2 IND 9 IND 11 IND 13 MRW 5 MRW 7 GB 2 GB 5 DATA 2
ORG 2: Increase residential and commercial organics recovery programs.	ORG B: Effective incentives for organics recycling are identified and pursued. ORG C: Home composting programs are active and successful in every county. ORG E: (see above) ORG F: Statutory and regulatory barriers to closed-loop organics recycling are addressed. ORG G: A beneficial use hierarchy is created for residual organic material processing and uses. ORG H: Soil carbon sequestration using recycled organic materials has increased based on research recommendations. ORG I: Technical assistance, research, and /or capital expense funds support the development of at least two biomass-to-energy and biomass-to-fuel and co-products “organic refinery” projects. ORG K: Statewide residential and commercial recycling of organics is standard practice, supported by efficient collection and increased infrastructure. Large municipalities offer food waste collection programs to residential and commercial customers.	Collaborate with businesses and agencies to increase residential and commercial organics recovery. Align multiple stakeholder interests to create a beneficial use hierarchy for recycled organic materials. Planners help local government add organics goals, recommendations, and milestones in solid waste plans. Support organics programs through CPG and PPG funds. Identify key elements of successful organics recycling programs. This may include incentives for increasing residential and commercial organics recovery. Engage home compost educators and provide resources to improve or develop outreach programs. Identify how many government buildings and schools currently collect organics for recycling. Identify what percentage of the population currently has yard debris or yard debris/food scrap recycling opportunities. Implement incentives to encourage increased organic recovery.	IND 10 GB 1 GB 2 GB 5 DATA 1 DATA 4 SW 1 SW 6 SW 9 SW 16

Initiative: Increasing Recycling for Organic Materials			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
ORG 3: Improve quality of recycled organic products.	ORG C: (see above) ORG D: The quality of recycled organic products has improved. ORG E: (see above) ORG L: Major retailers promote the use of natural yard care and pest control products, including compost.	Support the network of home compost educators with technical assistance and tools to improve compost and healthy soils education. Identify key areas where recycled organic product quality is poor. Recommend actions to improve quality of recycled organic products. Through CPG and PPG grant funds, enlist local government to promote natural yard care. Partner with other agencies, local governments, associated stakeholders, and non-profit groups.	IND 10 IND 14 MRW 5 MRW 7 GB 7 SW 8 SW 9
ORG 4: Develop a strategy to increase industrial and agricultural organics recovery.	ORG A: A strategy for increasing agricultural and industrial organics recycling is being implemented. ORG B: (see above) ORG F: (see above) ORG G: (see above) ORG H: (see above) ORG I: (see above)	Partner with stakeholders, such as the Bioenergy Coordination Team (*www.bioenergy.wa.gov/*), and research universities. Create and implement a consensus-based strategy to increase industrial and agricultural organics recovery. Align multiple stakeholder interests to create a beneficial use hierarchy for recycled organic materials. Identify barriers and opportunities for increasing industrial and agricultural organics recovery. Continue support for research and development of new recycled organic materials and processes.	IND 10 DATA 1 SW 6 SW 9
ORG 5: Propose solutions to statutory and regulatory barriers.	ORG A: (see above) ORG B: (see above) ORG F: (see above)	Partner with other agencies and industry stakeholders. Identify statutory and regulatory barriers to increasing organic material recovery and processing. Address issues when updating WAC 173-350 and when exploring changing RCW 70.95 to better support the Beyond Waste vision.	IND 13 MRW 5 MRW 7 GB 3 SW 5
ORG 6: Develop new products and technologies for organic residuals.	ORG B: (see above) ORG F: (see above) ORG G: (see above) ORG H: (see above) ORG I: (see above)	Partner with research universities, other agencies, and the private sector. Identify barriers and opportunities for increasing organic materials recycling. Align multiple stakeholder interests to create a beneficial use hierarchy for recycled organic materials. Continue support for research and development of new recycled organic materials and processes.	IND 7 IND 10 IND 11 GB 7 SW 15

Initiative: Making Green Building Practices Mainstream			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
GB 1: Coordinate and facilitate partnerships to implement the green building action plan.	GB A: Washington continues to be a leader in green building. GB B: All new state-funded buildings continue to meet or exceed green building requirements. GB G: At least five buildings are built to the Living Building standard in Washington. (*www.ilbi.org/*)	Continue working with governments, non-profits, and other organizations to expand the green building market in Washington. Provide ongoing assistance with strategic planning and education/outreach material development. Continue to work with partners including: Cascadia Region Green Building Council (CRGBC), Northwest EcoBuilding Guild (NWEBG), BuiltGreen, Northwest Natural Resource Group, and Habitat for Humanity (HfH). Encourage partnerships with Washington's manufacturing and work-force development sectors. Focus on producing green building materials and creating green jobs.	IND 3 IND 10 ORG 1 ORG 2 SW 4 SW 9
GB 2: Lead by example in government.	GB A: (see above) GB B: (see above) GB C: Government continues to identify and remove regulatory barriers to green building. GB H: At least 50 percent of all local governments in Washington have adopted green building policies and/or incentives. GB J: Authorities adopt policies that require low-impact development (LID) strategies to be included into building design and maintenance. GB K: Energy use in public buildings meets or exceeds Architecture 2030 goals. (*www.architecture2030.org/*)	Work with local governments on integrating green building elements into Solid Waste Plans. Provide technical assistance in the implementation of those plans. Initiate work with local building departments to encourage the adoption of low impact development (LID) policies, incentives for green building, and fast-track permitting. Start with counties that have already adopted LID policies and practices. Create or modify existing resources to make them relevant statewide. Provide information to builders, through existing organizational partnerships, on the strategies and benefits of LID. Work with GA, Commerce, OSPI, and other agencies affected by the state's green building mandate to ensure requirements are met or exceeded. Ongoing tasks include facilitating eco-charrettes for publicly funded projects, providing Build-It-LEED for Contractors trainings, and removing regulatory barriers to valuable green building products or practices.	IND 9 IND 10 IND 11 MRW 5 MRW 7 ORG 1 ORG 2 ORG 5 HW 4 DATA 3 SW 1 SW 4
GB 3: Provide incentives that encourage green design, construction, and deconstruction and begin removing disincentives.	GB A: (see above) GB C: (see above) GB G: (see above) GB H: (see above) GB J: (see above)	Stay up-to-date and share information on incentives available statewide and regionally. Use the Department of Commerce study on effective green building incentives to determine most viable options and how to assist with implementation. Work with local governments, Ecology planning staff, and other organizations when appropriate, to encourage the adoption of green building and green building compatible policies (such as low-impact development).	IND 3 ORG 5 DATA 3 HW 1, HW 4 SW 1, SW 4 SW 5, SW 16

Initiative: Making Green Building Practices Mainstream			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
GB 4: Expand capacity and markets for reusing and recycling construction and demolition materials.	GB D: 10 percent of all certified green building projects achieve credits for using existing building stock, or salvaged materials, and/or at least 75 percent waste diversion during construction.	Inventory existing C&D recycling infrastructure across the state. Develop an outreach strategy to encourage non-green builders to reduce and divert waste. Start with outreach to Home Building Associations (HBAs) and non-green builders to identify barriers and determine effective incentives to reduce construction waste. During the eco-charrette process, emphasize building reuse, salvage, and recycling. While working with HBAs, encourage non-green builders to integrate the use of salvaged materials into their practices. Partners include CRGBC, BuiltGreen, HBAs, and other green building organizations in the state.	IND 5 IND 7 IND 10 MRW 6 DATA 1 SW 4 SW 6 SW 7 SW 14
GB 5: Provide and promote statewide residential and commercial green building programs.	GB A: (see above) GB C: (see above) GB E: Green buildings occupy 15 percent of the total market share for new construction in Washington. GB G: (see above)	Continue working with agencies affected by Washington's green building mandate to encourage the expansion of certified green building practices in the state. Other partners include CRGBC, BuiltGreen, Earth Advantage, HfH, and the NWEBG. This is ongoing work. Also, promote the CRGBC's Living Building Challenge (*www.ilbi.org/*) and encourage green building standards to seek deeper levels of sustainability. Begin by learning the details of the Living Building Challenge. Work with green builders to encourage them to integrate Living Building principles into their practices and to, ultimately, build in compliance with the standard.	IND 10 MRW 7 ORG 1 ORG 2 DATA 1 DATA 4 SW 1 SW 4 SW 9
GB 6: Increase awareness, knowledge, and access to green building resources.	GB A: (see above) GB B: (see above) GB E: (see above) GB F: (see above) GB G: (see above) GB K: (see above)	Continue outreach and education efforts with regional green building organizations. Partner with employment development agencies to inform students how to join the green building work-force. Start by creating a "Green Jobs Guidebook" for the construction trades, as a companion to the "Green Building: Jobs of the Future" DVD (*www.youtube.com/watch?v=rr0IAWO9lnk*). Partners include community colleges, trade schools, and high schools. Schedule viewing events and panel discussions around the Green Building DVD to talk about job opportunities and barriers in the green building sector.	IND 14 MRW 11 ORG 2 DATA 4 HW 4 SW 1 SW 4 SW 9

Initiative: Making Green Building Practices Mainstream			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
GB 7: Encourage innovative product design.	GB A: (see above) GB D: (see above) GB G: (see above) GB I: A third-party certification system for green building materials effectively provides verification that products are manufactured in compliance with product stewardship and sustainability principles.	Partner with Washington Manufacturing Service, work-force development organizations, and the manufacturing sector to identify capacity and encourage the production of green building products. Work with Hazardous Waste, EPP, and MRW initiative staff on these efforts. Start by informing manufacturers about green building material credits and describing how their products could meet those credits in white papers and presentations at trade events. Continue working with other Ecology programs and state and local agencies to encourage the adoption of green building products and practices. Analyze, promote, and support quality third-party certification systems. This work is dependent on industry priority and movement.	IND 3 IND 7 IND 13 MRW 7 ORG 3 ORG 6 SW 7 SW 8

Initiative: Measuring Progress Toward Beyond Waste			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
DATA 1: Consolidate all related and useful data collection efforts and develop a comprehensive data tracking and evaluation system for Beyond Waste and other environmental activities.	DATA A: The majority of W2R and HWTR staff work plan activities correspond to Beyond Waste indicators. The Agency understands how Beyond Waste indicators relate to agency performance measures. DATA B: A waste characterization study is completed every four years. State studies are coordinated with waste characterization studies done at the local level. (Same as SW F)	Evaluate and consolidate data collection efforts that feed the Beyond Waste Progress Report (*www.ecy.wa.gov/beyondwaste/bwprog_front.html*) and other projects. Tie this process to program planning, performance measurements, and recommendation DATA 2. Waste 2 Resources and Hazardous Waste program staff and managers tie specific actions in work plans to Beyond Waste indicators by the 2011-13 biennium. Partners include local governments and other agencies. Oversee a waste characterization study in 2009-10. Analyze and share data with all interested parties. Before the five-year planning timeframe is up, plan or begin another waste study. Partners are consulting firms, local governments, colleges and universities, businesses, and industry.	IND 1 IND 6 MRW 4 MRW 5 MRW 6 MRW 12 ORG 2 ORG 4 GB 4 GB 5 HW 2 HW 11 SW 6 SW 7

Initiative: Measuring Progress Toward Beyond Waste			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
DATA 2: Update and review existing indicators on an annual basis. Develop and implement an evaluation process for all working indicators. Eliminate non-useful/non-viable measures, and/or add potential new measures.	DATA C: An evaluation process and recommendations for existing indicators are in place.	Evaluate existing indicators before publishing the 2010 progress report. Get input from SWAC, Ecology staff, and local government. Use input to modify the 2010 progress report and make it consistent with the 2009 plan update. Complete less comprehensive evaluations prior to updating the progress report annually. Partners include local governments, outside agencies, businesses, and industry.	IND 1 HW 2
DATA 3: Base policy decisions on analysis of trends and projections based on Beyond Waste indicators.	DATA D: Annual indicator reports include goals and are evaluated. Policy decisions are based on the trend analysis.	Over the next five years, develop target goals for most, perhaps all, of the indicators. Include this information in the progress report. Evaluate the Beyond Waste Plan and program plan, discuss progress toward goals and apply decisions to future activities. Partners include Ecology management (upper and mid-level) and staff, local governments, and outside agencies.	MRW 4 MRW 5 MRW 6 ORG 1 GB 2 GB 3 HW 2
DATA 4: Continue to expand the communication strategy for the Beyond Waste Progress Report within Ecology and externally.	DATA E: The progress report receives publicity internally and externally.	Ecology's Waste 2 Resources, Hazardous Waste, and Communications and Education staff create and implement a communications plan for the Beyond Waste Progress Report. Disseminate the Progress Report to various internal and external audiences. Implement actions in progressive years, building on the overall strategy gradually. Partners include local governments, outside agencies, businesses, and industry.	IND 2 IND 6 IND14/ MRW 11 ORG 2 GB 5 GB 6 HW 2 SW 9
DATA 5: Update and enhance the Consumer Environmental Index (CEI).	DATA F: Annual updates of the CEI as it currently exists are completed. DATA G: A strategy to enhance the CEI is in place and enhancements are in progress.	Implement a plan for updates and enhancements to the CEI. (*www.ecy.wa.gov/programs/swfa/swac/docs/SWAC2008JanCEIbackground.pdf*). Complete annual updates and enhancements as set forth in the plan. Enhance the CEI as more data or funding becomes available. Partners are outside agencies, local governments, colleges and universities, and consulting firms.	IND 8/ MRW 1 IND 10 MRW 5 MRW 7

Current Hazardous Waste System Issues			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
Pollution Prevention Planning			
HW 1: Encourage P2 planners to address hazardous substance use including toxicity and risk in their P2 plans…	HW A: Most P2 plans comprehensively address hazardous substance use as well as EPP, solid waste, and water use when appropriate.	Focus on eliminating or minimizing the most toxic chemicals, using TRAC recommendations (*www.ecy.wa.gov/biblio/0804029.html*). Start a sector campaign with P2 planners, likely on toxic metals, in spring of 2010. Partners may include Puget Sound Partnership and relevant associations. Run the campaign for several years, and then start a second campaign, possibly on solvents or PAHs.	IND 1 IND 8 IND 9 IND 12 MRW 3 MRW 8 GB 3
HW 2: Develop guidance on acceptable Environmental Management System (EMS) and environmental reporting systems.	HW B: Guidance on acceptable EMS and environmental reporting systems is developed.	Increase emphasis on toxic substance reporting as part of overall reduction efforts. Include Global Reporting Initiative *www.epa.gov/p2/pubs/resources/p2meas_gri.htm* and use results of the Industrial Footprint (*www.ecy.wa.gov/programs/swfa/industrial/IndFootprint.html*) project.	IND 1 IND 12 DATA 1 DATA 2 DATA 3 DATA 4
HW 3: Improve P2 plan quality and relationships with P2 planners. Work to ensure P2 plans are implemented.	HW C: Most P2 planners design and implement high quality plans. Relationships with P2 planners continue to improve.	Reform information technology for reporting and technical assistance opportunities, based on studies on improving pollution prevention planning. Do a statewide survey on the effectiveness of any new reporting/P2 guidance.	IND 1 IND 12
HW 4: Encourage P2 planners to develop an energy management program to identify and implement conservation measures or renewable energy opportunities that reduce greenhouse gas emissions.	HW D: The majority of P2 planners implement effective energy management and related measures that result in continuous improvement and reduced emissions, including greenhouse gases.	Finish implementing the EPA grant on energy management. Provide TA referrals for energy management to interested P2 planners. Encourage facilities through TREE (*www.ecy.wa.gov/programs/hwtr/tree/index.html*) and lean (*www.ecy.wa.gov/programs/hwtr/lean/index.html*) projects to also address energy management.	IND 1 IND 10 IND 12 GB 2 GB 3 GB 6

Current Hazardous Waste System Issues			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
Compliance with Dangerous Waste Regulations			
HW 5: Increase the number of local and state compliance inspectors so staffing levels are sufficient to inspect LQG's and MQG's every three years and to provide most counties with local source control inspectors.	HW E: The chance of finding a significant environmental threat during a compliance inspection will drop to 50 percent.	Continue to request budget adds to increase the number of inspectors and local source control inspectors (*www.ecy.wa.gov/programs/hwtr/lsp/index.html*) (starting with the 2011 legislation session). Continue to research and implement logical enforcement efficiencies.	IND 11 IND 14/ MRW 11
HW 6: Additional user-friendly information is available to regulated facilities on how to comply with the Dangerous Waste Regulations.	HW F: Businesses use the additional compliance information available and have a better understanding of compliance with the regulations.	Continue to add information to Ecology's website (*www.ecy.wa.gov/programs/hwtr/index.html*). Post information for businesses on the Washington's Waters site (*www.ecy.wa.gov/washington_waters/index.html*). Explore the idea of making and posting compliance-related videos and webinars.	IND 2 IND 11 MRW 10
HW 7: Work toward safer management of small quantity generator (SQG) wastes.	HW G: Fewer environmental problems result from how SQGs manage their waste.	Continue supporting the Local Source Control Specialist (*www.ecy.wa.gov/programs/hwtr/lsp/index.html*) and Urban waters programs. Continue to implement the EPA grant on the Environmental Results Program (www.epa.gov/erp/) and Envirostars (*www.envirostars.org/*). Work with MRW 8 and 12 strategy developments to ensure SQGs are addressed. Request feedback on proposed strategies from local governments and other stakeholders. Include SGQs in appropriate sector campaigns, including those on toxic metals.	IND 8 IND 9 MRW 3 MRW 8 MRW 12 SW 5

Current Hazardous Waste System Issues			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
Permitting and Corrective Action			
HW 8: Ecology management work with appropriate local health authorities to gain greater oversight for Treatment, Storage and Disposal Facilities (TSDs) currently permitted in part by local governments.	HW H: Ecology staff can inform the public that an entire TSD operates in a safe manner, not just the state permitted sections of a TSD.	Ecology management will work on this.	MRW 10
HW 9: Ecology staff continues to ensure all state permitted TSDs are operated in a safe manner.	HW I: No new Corrective Action (CA) sites are created at permitted TSDs and hazardous waste facilities.	This is ongoing work.	MRW 8
HW 10: Ecology continues to make progress on the goal to have environmental contamination under control at HWTR permitted corrective action sites by 2020.	HW J: Ecology is on track to have environmental contamination under control at 95 percent of the HWTR permitted corrective action sites by 2020.	This is ongoing work and will be enhanced by two additional staff (due to a legislative budget add) assigned to this work.	
HW 11: Ecology staff, through technical assistance and permitting authority, work to encourage safe hazardous waste recycling at TSD facilities.	HW K: All existing facilities that recycle hazardous waste comply with existing environmental regulations.	When time allows, give research and technical assistance to interested facilities. Permitting staff may want to gather information from P2 and compliance staff, as well as local governments, on needed opportunities for recycling.	IND 5 MRW 10 DATA 1

Current Solid Waste System Issues			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
Solid Waste Authorities and Local Planning Issues			
SW 1: Encourage inclusion of Beyond Waste principles into local plans.	SW A: Reducing the volume and toxicity of waste is a goal of all solid waste plans…	As an on-going effort, planners assist and encourage local governments to incorporate more Beyond Waste principles and programs in their local plans. Grants may be available to help.	MRW 9, MRW, ORG, GB, SW Issues in general.
SW 2: Revise local planning guidelines.	SW B: Solid waste planning guidelines are up to date and concurrent with the Beyond Waste vision, principles, and RCW 70.95.010.	Ecology staff, with a work group of affected stakeholders, update the solid waste planning guidelines. Aim to complete the update by early 2010. Partners include local governments and consultants.	MRW 9, MRW, ORG, GB, SW Issues in general.
SW 3: Expand assistance to local planning jurisdictions.	SW C: Locals tap into well-trained and highly-skilled TA staff proficient in planning, Beyond Waste priorities, and local issues and opportunities.	Ecology staff continue to improve their knowledge and abilities to provide technical planning assistance to local governments. One goal of this ongoing effort is a holistic planning approach to help local governments use their local waste plans to implement appropriate programs for their jurisdictions.	MRW, ORG, GB SW Issues in general.
SW 4: Collaborate with local governments.	SW D: Incentives are built into the Coordinated Prevention Grant (CPG) program to leverage implementation of the Beyond Waste vision.	Grant officers encourage the use of grants to further the Beyond Waste vision. This is an ongoing effort, though the current economic downturn may reduce grant funding opportunities for the near-term. Partners include local governments and legislators.	MRW, ORG, GB SW Issues in general.
SW 5: Ensure responsibilities are clear.	SW E: Solid waste laws and regulations are updated to support the Beyond Waste Vision.	Review and propose revisions to solid waste laws and regulations. Explore options to revise RCW 70.95 in support of the Beyond Waste vision. Partners are Ecology staff, stakeholders, and legislators.	IND 8/ MRW 1 IND 13, MRW 2 MRW 4, MRW 6 MRW 8, ORG 5 GB 3, HW 7
Waste Reduction, Recycling, and the Technical Nutrient Cycle			
SW 6: Characterize Washington's solid waste streams.	SW F: A waste characterization study is completed every four years. State studies are coordinated with waste characterization studies done at the local level. (Same as DATA B)	A waste characterization study is being done in 2009, with a second part to be done in 2010. Before the five-year planning timeframe is up, plan or begin another waste study. Partners include consulting firms and local governments.	MRW 12 GB 4 ORG 2 ORG 4 DATA 1

Current Solid Waste System Issues			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
SW 7: Plan for a stronger recycling system and technical nutrient cycle, including promoting local manufacturing with recycled feedstock.	SW G: A strategy is in place for strengthening the technical nutrient cycle. This supports sustainable products, producer responsibility, and a sustainable economy. SW H: All state agencies and other governments recycle. SW I: Statewide recycling is standard practice for commercial and residential generators, supported by efficient collection and increased infrastructure.	Start with an assessment of current recycling infrastructure and markets. Continue to address recycling systems and quality of materials. Focus on materials that present challenges, product stewardship opportunities, and incentives, including funding mechanisms. Provide assistance to state agencies, including promotion of sustainable products. Continue to improve recycling programs, including paper. Efforts will rely on availability of funding and opportunities from outside sources. Potential partners are local governments, NGOs, haulers, recyclers, recycling processors, manufacturers, and other state agencies.	IND 5 IND 7 IND 13 MRW 4 MRW 6 MRW 7 MRW 10 GB 4 GB 7 DATA 1
SW 8: Encourage manufacturers, retailers and other businesses to reduce packaging materials and wastes.	SW J: An agreement is reached with major retailer organizations in the state to establish sustainable packaging guidelines and packaging reduction strategies.	Research and build on efforts under way. Open up dialogue with businesses, with the goal of a memorandum of understanding. This effort will not begin until 2011 or later and will need some assistance from outside the agency. Partners include businesses and business interests, NGOs, and local governments.	IND 10 IND 13 MRW 7 ORG 3 GB 7
SW 9: Educate the public and businesses on the benefits and practice of waste reduction and recycling.	SW K: Education efforts that promote waste reduction and recycling are in place and complement local and regional efforts. The relationship to greenhouse gases is emphasized.	Initially, maintain and increase focus on current and ongoing education efforts. Begin assessing education efforts, successes and needs in 2010. Survey and share available resources. Education messages should emphasize benefits and link to agency priorities, such as climate change. Use grant funds to leverage education efforts. Local governments, NGOs, haulers, and recyclers are partners.	IND 14/MRW 11 ORG 2 ORG 3 ORG 4 GB 5 DATA 4
Disposal – Yesterday, Today and Tomorrow - For Closed and Abandoned Solid Waste Landfills			
SW 10: Identify closed and abandoned landfills statewide.	SW L: All jurisdictional health departments complete inventories of closed and abandoned landfills. SW M: Closed and abandoned landfills are marked on official records, and all property owners are notified.	Encourage jurisdictional health departments (JHDs) to inventory closed and abandoned landfills, and share existing information. Use grant funds when available. Inventory efforts will be ongoing, as jurisdictions undertake them. JHDs are key partners.	
SW 11: Evaluate and prioritize problems at closed and abandoned landfills.	SW N: Jurisdictional health departments develop lists of prioritized closed and abandoned landfills and their problems.	Encourage JHDs to inventory closed and abandoned landfills, and share existing information. Work is jurisdiction-dependent and ongoing. JHDs are key partners.	

Current Solid Waste System Issues			
Recommendation	**Milestones**	**Implementation Strategies**	**Synergies with Other Initiatives**
SW 12: Develop feasible and responsible processes for addressing priority closed and abandoned landfills.	SW O: Processes for addressing priority closed and abandoned landfills are developed with at least one pilot cleanup site under way.	Work with JHDs to devise clean-up potential processes. Assist JHDs with pilot processes. Timing of work is jurisdiction-dependent. Partners are JHDs and Ecology's Toxic Cleanup Program (TCP).	
SW 13: Identify funding to address priority closed and abandoned landfills.	SW P: Cost estimates for addressing highest priority closed and abandoned cleanup sites are developed, along with a list of funding options.	Work with JHDs to devise cost estimates and funding options. Timing of work is jurisdiction-dependent. A more complete inventory of prioritized sites is needed before clean-up funding options are developed. Partners are JHDs and Ecology's Toxic Cleanup Program (TCP).	
Disposal – Yesterday, Today and Tomorrow - For Existing Disposal Facilities			
SW 14: Ensure that existing disposal facilities comply with requirements.	SW Q: Regulators conduct evaluation of compliance and financial assurance on a regular basis. Action plans are in place to bring facilities into compliance.	Update and maintain a statewide database of disposal facility compliance and financial assurance. Provide technical assistance to jurisdictional health departments. Much of this work is ongoing. JHDs, private disposal facility owners and operators are partners.	MRW 10 GB 4
Disposal – Yesterday, Today and Tomorrow - For the Future			
SW 15: Continually reduce disposal impacts on human health and the environment…	SW R: Research and recommendations on long-term waste disposal and transfer impacts and requirements is ongoing.	Start with regular inventory of disposal and waste transfer infrastructure. Assess disposal facility requirements. Significant work might not start before 2011. Potential partners include research institutions, local governments, and private disposal facility owners and operators.	MRW, ORG, GB in general.
Financing Solid Waste For the Future			
SW 16: Evaluate financing for the solid waste system, including moving toward Beyond Waste, in consultation with the SWAC and interested parties.	SW S: A report is developed with the state SWAC, or other similar group, providing options and recommendations for financing the solid waste system in support of the Beyond Waste vision.	Continue to research funding conditions and potential solutions. Identify funding for studies. Explore the use of universities for research. This work will be ongoing as resources are available. Staff will spend more time on this in 2010-11. State SWAC and other stakeholders are partners. This may involve legislators if new funding mechanisms need to be written into statute.	MRW 8 ORG 2 GB 3

Roles for Local Government Partners

Local governments have requested more explanation of their role in reaching the Beyond Waste vision. The success of the Beyond Waste Plan depends heavily on local government engagement and action. Their role is large and vital.

Locals have asked specifically what a "Beyond Waste" project is and how these projects differ from others intended to reduce waste, increase recycling, or address other solid and hazardous waste concerns. Overall, projects that help to reduce waste and toxics are moving us in the Beyond Waste direction. Beyond Waste projects include MRW, organics, and green building, but there are other areas in the beyond waste plan to focus on as well. Projects will look different by jurisdiction. Some jurisdictions can lead and innovate; others deal with more basic challenges. Wherever local governments are on this continuum, they have many opportunities to help move Washington Beyond Waste.

Some overarching themes and approaches apply to many of the Beyond Waste Initiatives. These are essential actions for locals to consider:

- **Include Beyond Waste Initiatives, goals, recommendations, and milestones in your local comprehensive solid waste or hazardous waste plan.** When updating local solid or hazardous waste management plans, include language from the Beyond Waste Plan that are consistent with local goals.

- **Support resource recovery and recycling infrastructure development.** To increase resource recovery, we need processing facilities.

- **Focus programs on preventing wastes in the first place.** This is the key tenet of the Beyond Waste Plan. It is not enough to manage wastes; we must also create less waste.

- **Encourage product stewardship and extended producer responsibility programs.** Much of our waste comes from products. When producers take responsibility for their products they can assist with end-of-life management and the creation of less wasteful and less toxic products.

- **Collect, analyze and share data.** Describe current trends accurately and work collaboratively to develop a better picture of our progress. Data collected consistently across jurisdictions and the state is the most useful.

- **Share your stories.** Stories on the Solid Waste Information Clearinghouse and in the Closed Loop Scoop serve as models. They inspire other communities and help others avoid program pitfalls.

Here are recommendation-specific ideas for local governments to help implement Beyond Waste. **Stars (*) indicate key roles for local governments. Success in these areas depends upon your participation!**

For specific program and project ideas, see the Solid Waste and Hazardous Waste Planning guidelines: *www.ecy.wa.gov/programs/swfa/localplan.html*

NOTE: Some milestones and recommendations are abbreviated to save space.

Industries Recommendations and Local Role

IND 1: Modify the P2 Planning program to dovetail with the Beyond Waste vision.

Role for Locals: *Provide P2 assistance to CESQGs, with focus on reducing and eliminating toxics and wastes.*

IND 2: Expand information on Ecology's Web site.

Role for Locals: *Promote web information to hazardous waste generators, linking to Ecology's website when applicable.*

*IND 3: Put in place several Beyond Waste incentives.

Role for Locals: *Use incentives, such as "Envirostars," to encourage waste reduction at businesses.*

IND 4: Encourage new businesses to adopt sustainability practices.

Role for Locals: *Encourage sustainable business practices in outreach efforts.*

*IND 5: Encourage waste handlers… to become materials brokers.

Role for Locals: *Promote by-product synergy efforts to your local businesses.*

IND 6: Support EPA's "Beyond Waste-type" efforts.

Role for Locals: *When commenting on EPA documents or regulations or using EPA grant monies, encourage EPA to support Beyond Waste.*

IND 7: Promote sustainability in product development.

Role for Locals: *Encourage local businesses to produce more sustainable products.*

IND 8: Eliminate or minimize groups of the most toxic chemicals, as part of Ecology's Reducing Toxic Threats work. (Same as MRW 1.)

Role for Locals: *As products of focus are identified, provide education and technical assistance on using safer alternatives and take-back programs.*

IND 9: Use the sector approach as the framework to help implement the agency's initiatives.

Role for Locals: *Provide business technical assistance to selected sectors.*

IND 10: Support the creation of green jobs and a green economy while emphasizing ways to reduce the use of toxic chemicals and generation of wastes.

Role for Locals: *Work in cooperation with economic development agencies or efforts.*

IND 11: Help minimize the release of toxics into stormwater.

Role for Locals: *Address non-point pollution sources through business technical assistance efforts.*

IND 12: Implement the Toxic Reduction Advisory Committee (TRAC) recommendations.

Role for Locals: *Focus toxic reduction efforts on the "worst of the worst" chemicals, such as mercury.*

*IND 13: Support product stewardship legislation and EPP legislation as recommended by the Governor's sponsored Climate Action Team.

Role for Locals: *Support product stewardship and EPP legislative efforts. Local government support is vital to adopting product stewardship and EPP programs.*

*IND 14: Educate the public and businesses on prevention, proper use, storage, and disposal of hazardous products and wastes. Encourage safer alternatives to minimize toxic threats, especially to vulnerable populations. (Same as MRW 11)

Role for Locals: *Provide education and outreach to businesses and the public, including vulnerable populations. Work cooperatively with other local governments and the state to increase the impact of educational messages as media often crosses city and county boundaries.*

MRW Recommendations and Local Role

MRW 1: Eliminate or minimize groups of the most toxic chemicals as part of Ecology's Reducing Toxic Threats work. (Same as IND 8)

Role for Locals: *As products of focus are identified, provide education and technical assistance on using safer alternatives and take-back programs.*

*MRW 2: Reduce threats from mercury.

Role for Locals: *Conduct mercury reduction and collection efforts. Help promote the state's auto switch rebate program. Support product stewardship efforts. Purchase mercury-free products.*

MRW 3: Reduce threats from PBTs (Persistent Bio-accumulative Toxins).

Role for Locals: *Support lead and other PBT collection, reduction, and product stewardship efforts. Purchase PBT-free products.*

MRW 4: Develop a more comprehensive list of covered electronics through a product stewardship infrastructure.

Role for Locals: *Promote programs to collect and recycle electronics. Support efforts to add more items to the E-cycle Washington program.*

*MRW 5: Reduce the use of pesticides, emphasize proper use, and encourage effective alternatives.

Role for Locals: *Promote alternatives to pesticides to the public, governments, schools, and businesses. Collect data on use, such as shelf surveys.*

MRW 6: Reduce and manage all architectural paint wastes.

Role for Locals: *Support product stewardship efforts for paint. Find alternatives, such as paint recycling or proper disposal, to costly paint collection programs.*

*MRW 7: Implement and promote Environmentally Preferable Purchasing by state and local governments and in institutional settings, with Ecology leading by example. Support the Climate Action Team proposal and other initiatives.

Role for Locals: *Establish EPP programs at local governments. Educate the public and businesses on EPP.*

MRW 8: Ensure MRW is regulated and managed according to hazards, toxicity, and risk.

Role for Locals: *Help find the most efficient and appropriate management options for hazardous materials based on toxicity and risk.*

*MRW 9: Support full implementation of local hazardous waste plans.

Role for Locals: *Keep your plan current and implement all six required elements of your hazardous waste plan. Focus on preventing, not just managing, wastes.*

*MRW 10: Ensure businesses and facilities handling MRW comply with environmental laws and regulations. Encourage as much reuse and recycling of MRW as possible.

Role for Locals: *Operate public facilities in full compliance and provide sufficient oversight to private facilities to ensure they are doing likewise. Encourage reuse and recycling at these facilities.*

*MRW 11: Educate the public and businesses on prevention, proper use, storage, and disposal of hazardous products and wastes. Encourage safer alternatives to minimize toxic threats, especially to vulnerable populations. (Same as IND 14)

Role for Locals: *Provide education and outreach to businesses and the public, including vulnerable populations. Work cooperatively with other local governments and the state to increase the impact of educational messages, as media often crosses city and county boundaries.*

MRW 12: Develop and implement a strategy for a more regionally focused MRW program by evaluating the most significant threats and effective approaches, including safer alternatives, to reduce those risks.

Role for Locals: *Assess regional needs and risks for MRW management in your area, in cooperation with Ecology efforts. Collect data on MRW to help identify trends and problem waste focus areas.*

Organics Recommendations and Local Role

*ORG 1: Lead by example in government.

Role for Locals: *Establish organic recycling and food recovery programs in local governments.*

*ORG 2: Increase residential and commercial organics recovery programs.

Role for Locals: *Provide organics recovery programs to residents and businesses, including home composting. Develop incentives to increase organics infrastructure and program participation. Promote healthy soils and natural yard care.*

*ORG 3: Improve quality of recycled organic products.

Role for Locals: *Make sure publicly owned facilities or private facilities processing publicly collected organics produce high quality compost products. Educate consumers about healthy soils and recycled organic products and their uses.*

ORG 4: Develop a strategy to increase industrial and agricultural organics recovery.

Role for Locals: *Help identify what industrial and agricultural organics exist in your county, and what systems exist for turning these materials into products. Work with associated agencies to encourage industrial and agricultural organics generators in your jurisdiction to recover organic wastes.*

ORG 5: Propose solutions to statutory and regulatory barriers.

Role for Locals: *Identify regulatory barriers and propose solutions to help increase organics collection and recycling in your county.*

ORG 6: Develop new products and technologies for organic residuals.

Role for Locals: *Assist with opportunities to develop new products, technologies and organic processing facilities. Support the use and development of bio-fuels and energy. Participate in the statewide effort to develop a beneficial use hierarchy for recycled organic materials.*

Green Building Recommendations and Local Role

GB 1: Coordinate and facilitate partnerships to implement the green building action plan.

Role for Locals: *Collaborate with other government agencies and green building organizations in your area.*

*GB 2: Lead by example in government.

Role for Locals: *Encourage building departments to establish policies and meet goals for green building, low impact development, and energy reduction goals for local government buildings.*

*GB 3: Provide incentives that encourage green design, construction, and deconstruction and begin removing disincentives.

Role for Locals: *Work with building departments to establish permitting and other incentive programs for green projects. Evaluate existing policies to identify barriers to green building practices.*

GB 4: Expand capacity and markets for reusing and recycling construction and demolition materials.

Role for Locals: *Encourage deconstruction and support building material reuse and recycling operations. Promote incentives for developers for renovation of existing buildings as opposed to demolition and new construction. Encourage contractors to integrate salvaged building materials into their projects.*

GB 5: Provide and promote statewide residential and commercial green building programs.

Role for Locals: *Work with other government agencies and green building organizations on education and outreach programs, such as promotional materials and recognition programs.*

*GB 6: Increase awareness, knowledge, and access to green building resources.

Role for Locals: *Provide educational and outreach programs on green building. Encourage local trade schools and colleges to offer green building education. Collaborate with green building organizations in your area to develop content.*

GB 7: Encourage innovative product design.

Role for Locals: *Promote use and development of green building products.*

Measuring Progress (Data) Recommendations and Local Role

*DATA 1: Consolidate related and useful data collection efforts; develop data tracking and evaluation system.

Role for Locals: *Collaborate on and share data collection efforts, including waste characterization data.*

DATA 2: Update and review existing indicators on an annual basis…

Role for Locals: *Consider if you could collect data useful for indicators, such as pesticide shelf surveys. Provide feedback to Ecology on the indicators for the Beyond Waste Progress Report.*

DATA 3: Base policy decisions on analysis of trends and projections based on Beyond Waste indicators.

Role for Locals: *Use local data to make your policy decisions. Include Beyond Waste indicators in local decision-making processes.*

DATA 4: Continue to expand the communication strategy for the Beyond Waste Progress Report within Ecology and externally.

Role for Locals: *Share and use pertinent Progress Report measures within your jurisdiction. Provide feedback on usefulness of indicators and needed changes.*

DATA 5: Update and enhance the Consumer Environmental Index (CEI).

Role for Locals: *Local data could be used to enhance the CEI. For example, if enough jurisdictions conducted pesticide shelf surveys, Ecology could expand the pesticide indicator that is based on the CEI.*

Current Hazardous Waste Issues Recommendations and Local Role

HW 1: Encourage P2 planners to address hazardous substance use, including toxicity and risk, in their P2 plans…

Role for Locals: *Provide P2 assistance to SQGs; focus on reducing and eliminating toxics and wastes.*

HW 2: Develop guidance on acceptable environmental management system (EMS) and environmental reporting systems.

Role for Locals: *Share successful experiences with environmental management systems.*

HW 3: Improve P2 plan quality and relationships with P2 planners. Ensure P2 plans are implemented.

Role for Locals: *Provide P2 assistance to SQGs; focus on reducing and eliminating toxics and wastes.*

HW 4: Encourage P2 planners to develop an energy management program to identify and implement conservation measures or renewable energy opportunities that lead to greenhouse gas reduction.

Role for Locals: *Provide P2 assistance to SQGs, with focus on reducing toxics, wastes, and energy use.*

HW 5: Increase the number of local and state compliance inspectors so staffing levels are sufficient to inspect LQG's and MQG's every 3 years and to provide most counties with local source control inspectors.

Role for Locals: *If pertinent, work with Ecology-funded local source control specialists to provide outreach to hazardous waste generators in your jurisdiction.*

HW 6: Additional user-friendly information is available to regulated facilities on how to comply with the Dangerous Waste Regulations.

Role for Locals: *Promote web information to hazardous waste generators, linking to Ecology's website when applicable.*

*HW 7: Work towards safer management of small quantity generator (SGQ) wastes.

Role for Locals: *Provide technical assistance to SQGs to reduce and safely manage their waste streams.*

*HW 8: Ecology management work with appropriate local health authorities to gain greater oversight for Treatment, Storage and Disposal Facilities (TSDs) currently permitted in part by local government.

Role for Locals: *Work with Ecology regulators to attain best management of TSD facilities.*

HW 9: Ecology staff continues to ensure all state permitted TSD's are operated in a safe manner.

Role for Locals: *Encourage the TSD(s) located in your jurisdiction to work closely with Ecology.*

HW 10: Ecology continues to make progress on the goal to have environmental contamination under control at Hazardous Waste & Toxic Reduction (HWTR) permitted corrective action sites by 2020.

Role for Locals: *Encourage the TSD(s) located in your jurisdiction to work closely with Ecology.*

HW 11: Ecology staff, through technical assistance and permitting authority, work to encourage safe hazardous waste recycling at TSD facilities.

Role for Locals: *Request recycling services for MRW wastes collected at local facilities. Encourage local businesses to do the same.*

Current Solid Waste Issues Recommendations and Local Role

*SW 1: Encourage inclusion of Beyond Waste principles into local plans.

Role for Locals: *Incorporate elements of the Beyond Waste Plan, consistent with your goals, when updating local solid or hazardous waste management plans.*

SW 2: Revise local planning guidelines.

Role for Locals: *Assist Ecology with updates to the planning guidelines as requested.*

*SW 3: Expand assistance to local planning jurisdictions.

Role for Locals: *Work with Ecology staff to help advance Beyond Waste efforts in your locale.*

*SW 4: Collaborate with local government.

Role for Locals: *Use grant programs to help advance Beyond Waste efforts in your jurisdiction.*

SW 5: Ensure responsibilities are clear.

Role for Locals: *Support efforts to update solid waste regulations to facilitate the Beyond Waste Vision.*

SW 6: Characterize Washington's solid waste streams.

Role for Locals: *Collaborate and share data collection efforts, including waste characterization data and methodologies, with Ecology and others.*

*SW 7: Plan for a stronger recycling system and technical nutrient cycle, including promoting local manufacturing with recycled feedstock.

Role for Locals: *Implement and operate waste reduction and recycling programs at your offices as well as your jurisdictions. Provide programs and assistance for commercial customers. Promote using recycled products and feedstock. Support infrastructure, market development, and product stewardship.*

SW 8: Encourage manufacturers, retailers and other businesses to reduce packaging materials and wastes.

Role for Locals: *Provide programs and assistance for commercial customers. Promote efforts to reduce packaging.*

*SW 9: Educate the public and businesses on the benefits and practice of waste reduction and recycling.

Role for Locals: *Provide education and outreach to businesses and the public. Inform about the connections between waste reduction, recycling, and climate change.*

*SW 10: Identify closed and abandoned landfills statewide.

Role for Locals: *Complete an inventory of closed and abandoned landfills in your jurisdiction. Mark locations on official records and notify property owners.*

*SW 11: Evaluate and prioritize problems at closed and abandoned landfills.

Role for Locals: *Assess closed and abandoned landfills and prioritize based on risks.*

SW 12: Develop feasible and responsible processes for addressing priority closed and abandoned landfills.

Role for Locals: *Explore processes for cleaning up prioritized closed and abandoned landfills.*

SW 13: Identify funding to address priority closed and abandoned landfills.

Role for Locals: *Explore funding options for cleaning up prioritized closed and abandoned landfills.*

*SW 14: Ensure that existing disposal facilities comply with requirements.

Role for Locals: *Operate public facilities in full compliance and provide sufficient oversight to private facilities to ensure they are doing likewise.*

SW 15: Continually reduce disposal impacts on human health and the environment…

Role for Locals: *Make sure disposal fees cover complete costs. Strive to improve operations and closure practices over time. Consider emerging disposal impacts. Have a goal to reduce disposal of items that could create hazardous conditions.*

*SW 16: Evaluate financing for the solid waste system, including moving toward Beyond Waste, in consultation with the SWAC and interested parties.

Role for Locals: *Research funding needs and alternative funding systems. Address complete costs and internalizing external costs. Share your experiences with Ecology and others.*

Relationship with Agency Priorities

The Beyond Waste Plan is about more than just waste. Reducing the volume and toxicity of wastes helps the Department of Ecology meet its priorities to reduce toxic threats, face climate change, and protect Washington waters. These paragraphs summarize the connections between these agency priorities and each initiative and current issue.

How the Industries Initiative relates to agency priorities

The Industries initiative focuses on reducing wastes and toxics used and produced in the manufacturing processes by businesses in the state. The initiative is closely tied to the agency's Reducing Toxic Threats priority, with a specific emphasis of getting toxics out of products. This also helps protect Washington waters. Reducing wastes and getting toxics out of products lessens the amount of toxic chemicals and other contaminants in stormwater. Contaminated stormwater is a major source of water pollution. As part of this initiative, Ecology staff will review state agency's sustainability plans, which will now include efforts to reduce greenhouse gas emissions. Also, the initiative indirectly supports work on climate change by encouraging more waste reduction and recycling, and less use of virgin materials, which in turn reduces greenhouse gas emissions.

How the Small-Volume Hazardous Materials and Waste Initiative relates to agency priorities

Reducing toxic threats focuses on preventing the harm caused by widespread use of toxic chemicals. The Small-Volume Hazardous Materials and Waste initiative balances newer prevention strategies with the need to manage and regulate hazardous materials already in use. These strategies include finding ways to encourage manufacturers to make, and consumers to demand, safer products. The initiative has a recurring theme of identifying safer alternatives, critical to prevention. When manufacturers, governments, and consumers reduce their use of toxic chemicals and products, they reduce potential toxic releases to the state's waters. Several milestones directly work to allay climate change, particularly recommendations on environmentally preferable purchasing and consumer education.

How the Organics Initiative relates to agency priorities

Turning organic wastes into resources such as compost, energy, and fuels, improves Washington's waters, reduces toxic threats, and reduces greenhouse gas emissions. Organic materials in landfills decay without oxygen and emit methane, a powerful greenhouse gas. Keeping organic materials out of landfills reduces methane emissions and creates feedstocks for soil amendments, bioenergy, biofuels and other products. Some recycled organic products, such as biofuels and bioenergy, further reduce greenhouse gases by reducing fossil fuel use. Adding recycled organic materials such as compost to soils protects Washington's waters by reducing runoff and binding excess nutrients, heavy metals, and other pollutants. Organic soil amendments also reduce dependence on petroleum-based fertilizers and synthetic pesticides.

How the Green Building Initiative relates to agency priorities

The goal of this initiative is to make green building mainstream. Green building standards offer credits for materials that are less toxic than common building materials. As green buildings become more common, toxics in building materials will decrease. Green buildings are more energy-efficient than conventional buildings. Increasing the energy efficiency of existing buildings helps mitigate climate change. Choosing locally manufactured, recycled-content, and salvaged building materials reduce

greenhouse gas emissions. Finally, green buildings are more water-efficient than conventional buildings. Green building standards offer credits for water reduction and innovative water technologies. Strategies that manage stormwater on-site are encouraged, including green roofs, pervious paving, and rain gardens.

How the Measuring Progress Initiative relates to agency priorities

The Measuring Progress initiative evaluates the impact of our efforts to move Beyond Waste. The sixteen indicators in the Progress Report provide concrete ways to chart the state's performance on Ecology's priorities of protecting Washington waters, reducing toxic threats, and mitigating climate change. For example, mercury is one of the priority pollutants Ecology is working to reduce. The "Mercury in Biosolids" indicator shows that the amount of mercury arriving at wastewater treatment plants is decreasing over time. The "Consumer Climate Change Index" indicator measures another Ecology priority. Measuring progress in these target areas will show the effectiveness of Beyond Waste and other projects. We will continue to align the indicators with the agency's priorities.

How the Hazardous Waste Issues relate to agency priorities

These issues include the following: Pollution prevention (P2) planning, compliance with the Dangerous Waste Regulations, and permitting/corrective action for Treatment, Storage, and Disposal facilities for hazardous waste. All three areas support the Reducing Toxic Threats priority. Companies completing P2 plans will be encouraged to also address reducing greenhouse gas emissions. Compliance work plays a significant role in protecting Washington waters from pollution. The permitting/corrective action work not only helps prevent water pollution, but also encourages safe hazardous waste recycling, which can reduce greenhouse gas emissions.

How the Solid Waste Issues relate to agency priorities

These issues focus on increased waste reduction and recycling, along with proper management of disposed waste. Recycling is an important tool in reducing greenhouse gas emissions. Manufacturing with recycled feedstock, instead of virgin materials, uses far less energy, and thus reduces greenhouse gases. Similarly, manufacturing with recycled materials typically uses less water, a valuable resource. Waste reduction is an even stronger mechanism to prevent greenhouse gases and other pollutants. Producer responsibility can lead to the creation of less wasteful, less toxic products. Proper and safe waste management helps protect water quality.

As this summary shows, implementing the Beyond Waste Plan will not only help reduce waste, it will also bring us closer to meeting a number of the agency's other environmental goals.

Glossary

This glossary is intended to provide definitions for terms and acronyms that may be unfamiliar to the reader. Other more common terms in the solid or hazardous waste arenas (such as waste reduction, waste recycling, solid waste, hazardous waste, etc.) are not included in this glossary, but definitions can be accessed through these links to the solid and hazardous waste laws:
RCW 70.95; *http://apps.leg.wa.gov/RCW/default.aspx?cite=70.95*
RCW 70.105 *http://apps.leg.wa.gov/RCW/default.aspx?cite=70.105*

Architecture 2030
A non-profit organization that challenges the global architecture and building industry to reduce fossil fuel use in buildings and achieve carbon neutrality by 2030 by changing the way buildings and developments are planned, designed, and constructed. *www.architecture2030.org/*

Bioenergy and Biofuels
A renewable energy or fuel source that comes from biomass - recently living organisms or their metabolic by-products, available on a renewable basis (as opposed to fossil fuels, which are derived from long-dead biological material). The biomass can be derived from dedicated energy crops and trees, agricultural food and feed crops, agricultural crop wastes and residues, wood wastes and residues, aquatic plants, animal wastes, municipal wastes, and other waste materials.

Biosolids
Municipal sewage sludge that is a primarily organic, semisolid product resulting from the wastewater treatment process and can be beneficially recycled. Biosolids meet all requirements under Chapter 70.95J RCW.

BuiltGreen
A residential green building certification program. The program is administered through regional Homebuilding Associations across Washington. Certification checklists are specialized to suite the environmental conditions of the regions they serve. www.builtgreenwashington.org

Byproduct synergy
The principle underlying by-product synergy is that one industry's waste can be another's primary resource. It applies principles of industrial ecology to work together to match unwanted by-products as resources for new products and processes. This simple idea has great potential for reducing waste and toxins, as well as cutting operating costs.

CAT
The **Climate Action Team** was a governor sponsored, multi-stakeholder team tasked with coming up with actions to reduce greenhouse gas emissions.
www.ecy.wa.gov/climatechange/2008CAT_overview.htm

CEI
The **consumer environmental index** measures how consumption patterns influence pollution. The CEI uses expenditure patterns and calculates the cumulative environmental impacts from consumer choices. This includes impacts from manufacturing and the total supply chain.
www.ecy.wa.gov/programs/swfa/swac/docs/SWAC2008JanCEIbackground.pdf

CESQG
A **Conditionally Exempt Small Quantity Generator** generates 220 pounds or less of hazardous waste per month. The term Small Quantity Generator (SQG) can also be used. Hazardous waste generated by a CESQG is exempt from the Dangerous Waste Regulations if certain conditions are met. *http://apps.leg.wa.gov/WAC/default.aspx?cite=173-303*

CFLs
Compact fluorescent lamps or compact fluorescent lights are a type of fluorescent lamp typically designed to replace an incandescent lamp. They provide a comparable amount of light but generally use less power and have a longer rated life. Like all fluorescent lamps, CFLs contain mercury, which complicates their disposal.

Closed-loop
A cycle or system where secondary materials (wastes) are reclaimed and recycled back into the process from which they were originally generated.

Complete costs
Costs that include internal costs (all transactions tracked using traditional accounting methods and practices), future costs, and external costs (those such as environmental, societal, and health costs not accounted for by traditional accounting methods and practices), so that all costs are included.

Corrective action
A process to guide the cleanup of unauthorized releases at hazardous waste management facilities.

CPG
The Department of Ecology's **Coordinated Prevention Grants** help local governments develop and implement their hazardous and solid waste management plans. These grants are awarded once each biennium.

Downcycling
Recycling that results in a lower value use or re-use of resources such as composting paper rather than recycling it into new paper.

E-Cycle Washington
Washington's producer-funded recycling program for computers, monitors, laptops and televisions. *www.ecy.wa.gov/programs/swfa/eproductrecycle/index.html*

Environmental Justice
The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Environmental Management System (EMS)
A comprehensive, integrated, and systematic approach toward managing an organization's interaction with the environment.

EPA
The **Environmental Protection Agency** is a federal agency that leads the nation's environmental science, research, education, and assessment efforts. Created in 1970, EPA's mission is to protect human health and the environment.

EPP
Environmentally preferable purchasing, also known as green or responsible purchasing, is the procurement of products or services that cause less harm to human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, or disposal of the product or services.

Feedstock
Materials needed to produce a product in a manufacturing process. Feedstocks can be virgin raw (new) materials or secondary (recovered or recycled) materials from the same or another process.

Green building
Design or construction practices that significantly reduce or eliminate the negative impact of buildings on the environment and occupants in the areas of site selection, conservation of materials and resources, energy efficiency, water efficiency, and indoor environmental quality.

Green chemistry
The invention, design, and application of chemical products and processes to reduce or to eliminate the use and generation of hazardous substances.

HHW
Household hazardous waste is any waste that exhibits the properties of dangerous wastes, but is exempt from the Dangerous Waste Regulations solely because it is generated by households.

HWTR
The Hazardous Waste & Toxics Reduction Program of the Washington State Department of Ecology.

IPM
Integrated Pest Management programs use current, comprehensive information on the life cycles of pests and their interaction with the environment. This information, in combination with available pest control methods, is used to manage pest damage by the most economical means, and with the least possible hazard to people, property, and the environment.

LQG
A **Large Quantity Generator** is a business, organization, industrial facility, or other type of establishment that creates 2,200 pounds or more of hazardous waste per month. Generator status is based on the amount of dangerous waste generated each month. Annual reporting, waste shipment manifesting, and management requirements are different for each generator status.

Lean manufacturing
A new manufacturing and production philosophy that emphasizes systemic elimination of waste from all aspects of an organization's operations. Waste is viewed as any use or loss of resources that does not lead directly to creating the product or service a customer wants on demand.

LEED
The LEED (Leadership in Energy and Environmental Design) Green Building Rating System™ is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings developed by the U.S. Green Building Council. *www.usgbc.org/leed/leed_main.asp*

Living Building
The Living Building was developed by the Cascadia Region Green Building Council. It is considered the most sustainable green building standard on the market. *www.ilbi.org/the-standard*

MMFA (also WMMFA)
The **Washington Materials Management and Financing Authority** is the manufacturer authority created by state law to handle the recycling of certain electronics in the state of Washington. *www.wmmfa.net/*

MQG
A **Medium Quantity Generator** is a business, organization, industrial facility, or other type of establishment that creates more than 220 pounds but less than 2,200 pounds of hazardous waste per month.

MRW
Moderate-risk waste is the term used to describe the combined hazardous waste stream made up of Conditionally Exempt Small Quantity Generator (CESQG) Waste and Household Hazardous Waste (HHW). MRW is exempt from regulation as hazardous waste.

Natural yard care
Natural yard care emphasizes alternatives to pesticides, using water and fertilizer judiciously, planting the right plant in the right place, preserving healthy soil conditions, and proper lawn grass management.

Non-point source pollution
Pollution that occurs when rainfall, snowmelt, or irrigation runs over land or through the ground, picks up pollutants and deposits them into rivers, lakes, and coastal waters or introduces them into groundwater. These pollutants come from common, wide spread activities in *urban* and rural areas.

Organics (organic materials)
Substances and products of biological origin that have the potential to be returned to the soil, turned into biofuels, bioenergy, or other products. Organic materials include landscaping and yard waste, food waste, manures, crop residues, wood, soiled/low-grade paper, and biosolids.

P2
Pollution prevention is the use of processes or practices that reduce or eliminate the use of hazardous substances and the generation of wastes at the source.

PAH
Polycyclic aromatic hydrocarbons are a group of more than 100 different chemicals. Some occur as a by-product of burning organic substances like coal, oil, gas or garbage and end up as soot. Others PAHs are manufactured and used to make products ranging from roofing tar to medicines, from plastics to pesticides. Animal studies have linked PAHs to reproductive problems and weakened immune systems.

PBDE
Polybrominated diphenyl ethers are toxic flame-retardants used in many products including carpets, insulation, upholstery, and computers.

PBTs
Persistent bioaccumulative toxins are both naturally occurring and man-made substances that build up in the food chain and can affect human health and reproduction. These toxins travel long distances in the

atmosphere, move readily from land to air and water, and do not break down easily. PBTs include mercury, dioxins, DDT, and PCBs.

PCBs
Polychlorinated biphenyls are chlorinated compounds that have been used as coolants and lubricants in transformers, capacitors, and electrical equipment because they don't burn easily and are good insulators. The manufacture of PCBs was halted in the U.S. in 1977 because the build up in the environment and are known to cause cancer in animals.

PPG
Department of Ecology's Public Participation Grants provide funding to citizen groups and not-for-profit public interest organizations to provide public involvement in monitoring the cleanup of contaminated sites and prevent pollution by reducing or eliminating waste at the source.

Product stewardship
Product stewardship is achieved when those who produce, sell, use, or dispose of a product assume responsibility for the product's environmental, social, and economic costs throughout the product's life cycle. *www.ecy.wa.gov/sustainability/Resources/prod_steward.htm*

PVCs
Polyvinyl chloride is a common thermoplastic resin, used in a wide variety of manufactured products. Many vinyl products contain additional chemicals to make PVC flexible, which may leach out of vinyl products. Dioxin and vinyl chloride are also created in the production of PVC and can cause severe health problems.

RCRA
The **Resource Conservation and Recovery Act** is the federal law passed in 1976 that set standards for managing hazardous wastes and encouraging recycling over disposal. RCRA also includes the federal standards for solid waste landfills.

REACH
A 2007 European regulation on chemicals and their safe use. It deals with the **r**egistration, **e**valuation, **a**uthorization, and restriction of **ch**emical substances. REACH gives greater responsibility to industry to manage risks from chemicals. *http://ec.europa.eu/environment/chemicals/reach/reach_intro.htm*

SQG
A **Small Quantity Generator** is a business, organization, industrial facility, or other type of establishment that creates 220 pounds or less of hazardous waste per month. The term Conditionally Exempt Small Quantity Generator (CESQG) can also be used. Hazardous waste generated by a SQG is exempt from the Dangerous Waste Regulations if certain conditions are met.
http://apps.leg.wa.gov/WAC/default.aspx?cite=173-303

Sustainability
Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Technical Nutrients
Materials such as glass, paper, cloth, plastic, and metal that are often recyclable and can be processed for use as feedstocks in the production process. These materials make up a large portion of the solid waste stream.

Technical Nutrient Cycle
A system for collecting and processing technical nutrients, such as metals, plastics and glass, ideally a closed-loop of manufacturing, reuse, and recovery. The cycle maintains the value of technical nutrients and minimizes the downcycling of these nutrients into lower value products and uses.

Toxics or toxic substances
A general term that refers to hazardous substances and hazardous wastes that have the properties to cause or significantly contribute to death, injury, or illness of humans, animals, or other living things.

TRAC
Toxic Reduction Advisory Committee was a legislatively mandated stakeholder advisory committee that created a report and recommendations on business hazardous waste creation, technical assistance, and fees.

TSCA
The **Toxic Substances Control Act** of 1976 provides EPA with the authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. TSCA addresses the production, importation, use, and disposal of specific chemicals. Certain substances are generally excluded from TSCA, including food, drugs, cosmetics, and pesticides.

TSD
A **treatment, storage, or disposal** facility that has authorization from the Department of Ecology to conduct hazardous waste management activities.

W2R
Waste 2 Resources Program, formerly the Solid Waste & Financial Assistance Program of the Washington State Department of Ecology.