**2nd Draft State Solid and Hazardous Waste Plan Update**

**Moving Washington Beyond Waste and Toxics**

**Comment Form and Instructions**

Ecology is accepting comments on the second draft of the Solid and Hazardous Waste Plan 2015 Update (Moving Washington Beyond Waste and Toxics). The second draft is the last of three opportunities for public input in the state plan update process. Comments received on this draft will be used to create the final plan update.

Please submit your written comments by **February 20, 2015** via email, fax or US Mail at the addresses below. If you need more time, contact us.

**Ecology encourages the use of this comment form.** **Instructions:**

(1) Save form to your computer and make your comments.

(2) When finished, attach saved file to email.

(3) Send email to [cbou461@ecy.wa.gov](mailto:cbou461@ecy.wa.gov).

*If you choose not to use this comment form, please specify what each comment refers to; include section title, page number, and goal or action number where applicable.*

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| --- | --- | --- |
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* [**www.ecy.wa.gov/wasteplan/index.html**](http://www.ecy.wa.gov/wasteplan/index.html)

**Cover Page:**

**The State Solid and Hazardous Waste Plan**

**Moving Washington Beyond Waste and Toxics**

*“…If we want the U.S. to be competitive in the world economy, sustainable use of materials must be our goal.”*

From: Sustainable Materials Management: The Road Ahead

EPA, 2009, Introduction, page 1

**Table of Contents**

[**Executive Summary**](#ExecSum)

[**Framework and Foundations**](#Foundations)

* [State Solid and Hazardous Waste Plan Purpose and Vision](#PandV)
* [Sustainable Materials Management and the 2014 State Waste Plan Update](#SMM2014)
* [Where We Are Now: Waste Management in Washington](#NOWWMWA)
* [What Washington Will Look Like in 2035](#WA2035)
* [Progress on the 2009 State Plan](#Progress09)
* [Plan Update Process and Structure](#ProcessStructure)
* [Priorities for the Plan](#Priorities)
* [Key Principles and Strategies](#KeyPandS)

[**Plan Goals and Actions**](#GandA)

1. **Managing Hazardous Waste and Materials**
   1. [Section Introduction](#HWintro)
   2. [Pollution Prevention Goals and Actions](#P2GandA)
   3. [Compliance and Compliance Assistance Goals and Actions](#comply)
   4. [Permitting & Corrective Action Goals and Action](#PCA)s
   5. [Small Volume Hazardous Materials and Wastes Goals and Actions](#SVHMW) (Moderate Risk Waste)
2. **Managing Solid Waste and Materials**
   1. [Section Introduction](#SWIntro)
   2. [Solid Waste System Issues Goals and Actions](#SWSI)
   3. [Solid Waste Materials & Infrastructure Goals and Actions](#SWMI)
   4. [Organic Materials & Infrastructure Goals and Actions](#OMI)
3. **Reducing Impacts of Materials and Products** 
   1. [Section Introduction](#RIMPINtro)
   2. [Goals and Actions](#RIMPGandA)
4. **Measuring Progress** 
   1. [Section Introduction](#MPINtro)
   2. [Goals and Actions](#MPGandA)
5. **Providing Outreach and Information**
   1. [Section Introduction](#POintro)
   2. [Goals and Actions](#POGandA)

[**Glossary**](#Glossary)

**[Executive Summary](#TofC)**

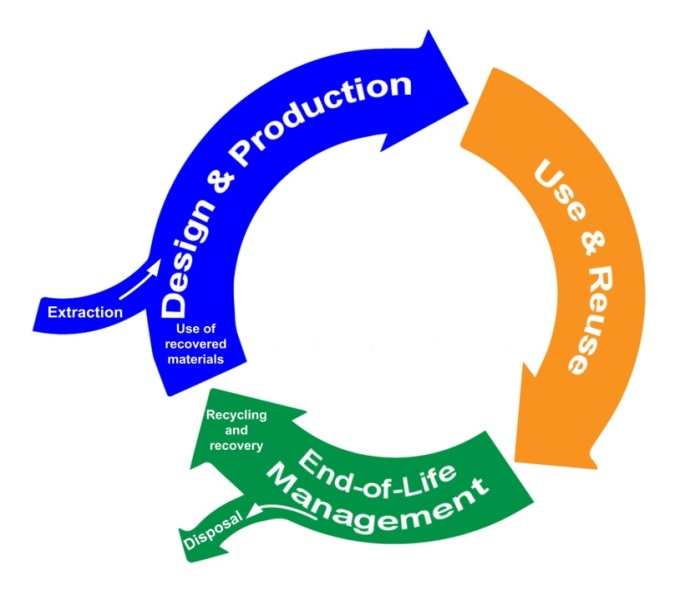
**The State Solid and Hazardous Waste Plan: What, Why and How?**

Washington Department of Ecology (Ecology) is required to develop and regularly update a state solid and hazardous waste plan ([Chapter 70.95](http://apps.leg.wa.gov/rcw/default.aspx?cite=70.95) and [Chapter 70.105](http://apps.leg.wa.gov/rcw/default.aspx?cite=70.105), Revised Code of Washington {RCW}). The state plan guides the future management of waste and materials in the state. It also gives direction to local governments as they develop local solid and hazardous waste plans. The state plan is our strategic plan to support the waste management hierarchy established in the main solid and hazardous waste statutes, which identify waste reduction as the highest priority. The Beyond Waste 30 year vision -- to eliminate most wastes and toxics and use any remaining waste as resources -- supports this hierarchy.

In preparing this plan update, Ecology consulted local governments, businesses, citizens, and environmental organizations across the state and provided multiple input opportunities. More information on the update process and the comments received is available on the website. ([www.ecy.wa.gov/wasteplan](http://www.ecy.wa.gov/wasteplan))

A key goal with this plan update is to better connect the future vision and the current system. Therefore the plan update continues to focus on reducing waste and toxics, as well as addressing where we are now.

**Planning for Sustainable Materials Management**

In order to both represent the current system, and to focus on reducing waste and toxics, we have integrated a sustainable materials management approach, as currently used by the Environmental Protection Agency (EPA). This is illustrated in the material life cycle graphic that Ecology adapted from Oregon Dept of Environmental Quality. Materials Management looks at the full life cycle of materials: the design and manufacturing phase, the use phase, and the end-of-life phase when the material is either disposed or recycled. Materials management still focuses on recycling and disposal issues. However, looking at production and use can help identify more sustainable ways to design products that use less energy, water and toxics. This is important because the adverse environmental impacts of extraction, production and use can be far greater than those associated with disposal when the product becomes a waste. According to EPA, a managing materials approach is essential to conserving our natural resources to meet both today’s needs and those of future generations.

**Structure of the State Plan**

We have also adopted a new structure for the state plan. We have shifted from the five initiatives and two current issues in the 2004 and 2009 plan to the following five sections:

1. Managing Hazardous Waste and Materials
2. Managing Solid Waste and Materials
3. Reducing Impacts of Materials and Products
4. Measuring Progress
5. Providing Outreach and Information

These sections contain goals and actions for the next five years. Section 1) addresses regulated hazardous waste generators, pollution prevention planners, and moderate risk waste. Section 2) deals with the wide variety of solid waste and materials work, including organic materials. Section 3) focuses on improving materials that eventually become components of products or waste, by focusing on what is used and produced. Section 4) addresses data needs, and Section 5) focuses on outreach and information needs.

**Priorities of the State Plan**

While the plan structure has changed, the focus remains on reducing waste and toxics, as well as safely handling waste. The following priorities will both move us closer to the vision and ensure the current system works well. In order to work effectively on some of these priorities, we will need restored or additional funding.

* Move upstream - increase our focus on manufacturing and use phases, not just on end-of-life issues
* Reduce toxic threats in products and industrial processes
* Increase efficiency of recycling and composting systems, and maximize effectiveness of the existing solid and hazardous waste infrastructure
* Mitigate climate change through waste reduction, reuse and recycling

**Moving Forward**

The purpose of the state plan is to set an overall direction for solid and hazardous waste management in Washington State. That direction is sustainable materials management. By setting this direction, the state plan should facilitate the adoption of similar waste and material related policies and programs by state and local government, private industry, and other partners. With many partners engaging in similar activities, rather than separate, dissimilar efforts, we are more likely to succeed in state sustainable materials management. Embarking on new directions is rarely easy. Working together should help Washington continue to be a leader in moving beyond waste and toxics.

**COMMENTS on EXECUTIVE SUMMARY**

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**[Framework and Foundations](#TofC)**

[**State Solid and Hazardous Waste Plan Purpose and Vision**](#TofC)

This plan fulfills the Washington Department of Ecology’s (Ecology) requirement to develop and regularly update a state solid and hazardous waste plan ([Chapter 70.95](http://apps.leg.wa.gov/rcw/default.aspx?cite=70.95) and [Chapter 70.105](http://apps.leg.wa.gov/rcw/default.aspx?cite=70.105), Revised Code of Washington [RCW]). The state plan has been called the Beyond Waste Plan.

The state plan guides the future management of waste and materials in the state. It also gives direction to local governments as they develop local solid and hazardous waste plans, which are also required by law. The plan is updated every five years, and the public, local government, businesses, and other stakeholders are invited to provide input during this time.

***Vision for Beyond Waste***

*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.*

In the 2004 state plan, Ecology envisioned a better future for solid and hazardous waste in Washington, to be realized by 2035. The year 2035 was chosen because then-Governor Gary Locke adopted a strategy to make Washington state sustainable in one generation, or 30 years. Implementing this vision is an essential element for the state to become sustainable. The plan vision builds on the waste hierarchies adopted in the solid and hazardous waste laws in the mid-1980s ([RCW 70.95](http://apps.leg.wa.gov/rcw/default.aspx?cite=70.95) and [RCW 70.105](http://apps.leg.wa.gov/rcw/default.aspx?cite=70.105).) These hierarchies place waste reduction as the highest priority, followed by recycling and safe disposal. We have made some progress towards this vision but still have further to go.

**[Sustainable Materials Management and the State Waste Plan Update](#TofC)**

The goal of sustainable materials management is to reduce negative environmental and health impacts (including climate impacts) by managing materials that become waste through all stages of their life cycle. In 2004, the U.S. Environmental Protection Agency (EPA) adopted a framework for [sustainable materials management](http://www.epa.gov/epawaste/conserve/smm/vision.htm), to address “the movement of materials through the economy and the environment from extraction to end of life.[[1]](#footnote-1)”

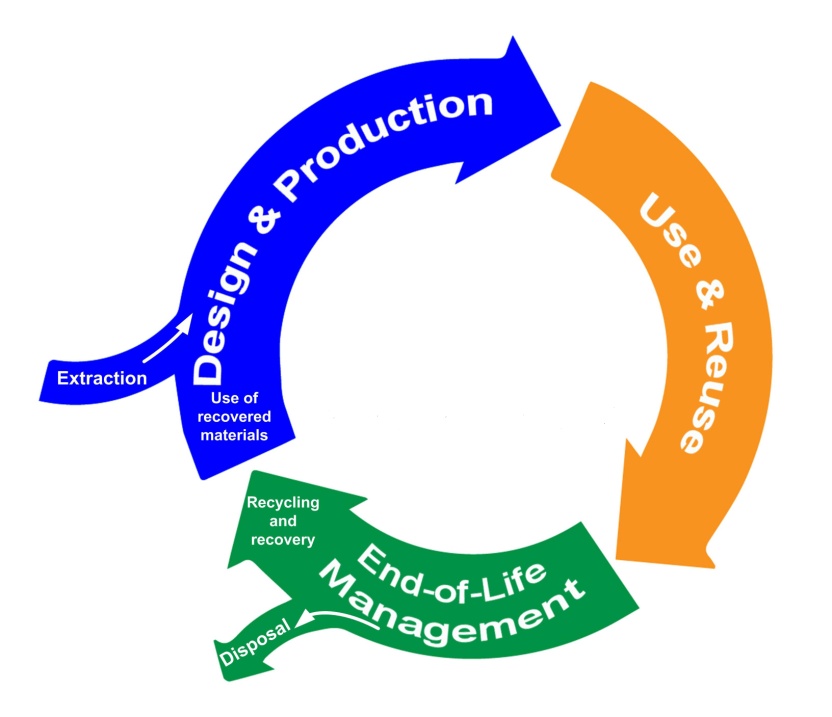
The 2035 Beyond Waste Vision is in line with the sustainable materials management direction EPA has asked states to adopt. According to EPA, this approach to managing materials is essential to conserving our natural resources to meet both today’s needs and those of future generations. EPA explains what the outcomes will be in the statement below.

**“The overall outcome from a sustainable approach to materials management:**

* Reductions in the volume and toxicity of material at all phases of the life cycle, across every sector of the economy
* Improvements in manufacturing supply chain efficiencies, resulting in increased competitiveness for American business
* Incorporation of sustainable materials management within the regulated community that levels the playing field by reducing energy and materials use, as well as improving environmental results[[2]](#footnote-2)”

While the previous state solid and hazardous waste plans (the Beyond Waste Plan) had a similar life cycle viewpoint, the state is more broadly adopting the sustainable materials management approach in this update. Washington’s southern neighbor, Oregon, became the first state to use this framework as the basis for their state waste management plan, also called their [materials management plan](http://www.deq.state.or.us/lq/pubs/docs/sw/2050vision/MaterialsManagementinOregon.pdf). As stated in Oregon’s plan:

“The materials management approach includes waste prevention and discard management, while seeking to reduce environmental impacts by managing materials through all stages of their life cycle. It identifies impacts and actions to address those impacts across the full cycle of materials and products as they move through the economy from raw material extraction to product design and manufacture, transport, consumption, use, reuse, recycling and disposal[[3]](#footnote-3).”

Oregon adapted EPA’s life cycle materials management graphic to a simplified three-stage cycle of design and production, use, and end-of-life management they called the “Life Cycle of Material and Products.” Figure 1 shows Washington’s slightly modified cycle graphic.

The sustainable materials management approach connects to the direction for toxics that Governor Jay Inslee has set for the state: "Today, our bigger concern [as opposed to permitted sources of pollution] is uncontrolled release of chemical pollutants that come from diffuse, large unregulated sources—from the brakes on cars to the flame retardants in our furniture.[[4]](#footnote-4)”

**Figure 1:**

**Life Cycle of Material and Products**

Governor Inslee is proposing a new three-prong approach that “targets known, unregulated toxic threats, discourages introducing problem chemicals into widespread commerce when safer approaches are available, and focuses efforts to find and eliminate sources of toxic pollution across the state”[[5]](#footnote-5). His proposed solutions include getting toxic chemicals out of consumer products in the design and production phase of manufacturing, instead of dealing with them at the end of a product’s life.

**Why Use a Sustainable Materials Management Approach?**

***“Sustainable materials manage­ment*** *(SMM) is an integrated approach toward managing material life cycles to achieve both economic efficiency and environmental viability. Material life cycles include all human activities related to material selection, exploration, extraction, transportation, processing, consumption, recycling, and disposal.*

*Strategies for SMM can be separated into two catego­ries: dematerialization and detoxifica­tion…. Dematerialization refers to the reduction of material throughput in an economic system…. Detoxification refers to the preven­tion or reduction of adverse human or ecological effects associated with mate­rials use….”*

*From “A Framework for Sustainable Materials Management” by Joseph Fiskel, 2006, August- JOM*

The sustainable materials management approach focuses on waste prevention as a way to reduce environmental and health impacts of materials, including climate impacts, while strengthening the economy. This approach emphasizes the importance of looking at the full life cycle of materials: the design and manufacturing phase, the use phase, and the end-of-life phase when the material becomes waste. We need to identify more sustainable ways to design products that use less energy, water, and toxics. The adverse environmental impacts of extraction, production, and use can be far greater than those associated with disposal when the product becomes a waste.

A sustainable materials management approach is vital because available resources are declining worldwide, while demand for resources continues to grow. As people consume more resources in the form of products and materials, it causes more pollution, including greenhouse gases and other toxic releases, and limits the ability of all people to meet their basic needs, now and in the future. We are using resources faster than the planet can renew them.

The demand for finite resources will continue to increase, putting increased pressure on our environment, and often on the communities that extract or manufacture these resources. Since the industrial revolution, our society has been operating on the assumptions that resources are abundant, readily available, and cheaply disposed. This is no longer the case. A linear use of resources where we extract materials, use them once, and then throw them away is unsustainable. Not only will we run out of key materials, but the throw-away economy continues to pollute our environment with waste and toxics. Instead, we can use our resources in a circular model, as illustrated by the sustainable materials management cycle.

Removing toxics from products is vital to protecting human health and the environment due to how they are handled during manufacturing, use, and disposal. Manufacture and use of some products unnecessarily exposes people to toxics, and recycling or disposal can cause toxics to be released into the environment. Removing toxics also supports reuse and recycling. Managing materials sustainably can help us:

* Conserve the resources we all depend on
* Live within our resource means
* Reduce impacts to the climate from our materials extraction, use, and disposal

Furthermore, sustainable materials management helps promote sustainable development and environmental justice. Currently, members of disadvantaged communities are more likely to face higher levels of exposures to waste and toxics, through their work or neighborhoods, than upper or middle class communities.

Table 1 shows how Ecology’s work currently fits into the sustainable material management cycle. While we have projects in each part of the cycle, most of our work is spent on end-of-life activities. Moving to a materials management approach will require some shifting of resources.

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| **Table 1: How Ecology’s Work Fits Into the Sustainable Materials Management Cycle\*** | | |
| **Design and Production** | **Use and Reuse** | **End-of-Life Management** |
| * Compliance with [Toxics in Packaging](http://www.ecy.wa.gov/programs/hwtr/hazcom/toxpackage.html), [Children’s Safe Products Act](http://www.ecy.wa.gov/programs/swfa/cspa/), [Better Brakes](http://www.ecy.wa.gov/programs/hwtr/betterbrakes.html) and other product laws * [Food waste prevention](http://www.ecy.wa.gov/programs/swfa/organics/prevent.html) * [Green chemistry](http://www.ecy.wa.gov/programs/hwtr/P2/GreenChem/greenchem_ecy.html) * [Alternatives Assessment Guide](http://www.ecy.wa.gov/programs/hwtr/chemalternatives/altAssessment.html) * Comprehensive [lean](http://www.ecy.wa.gov/programs/hwtr/lean/index.html) and [engineering assistance to businesses](http://www.ecy.wa.gov/tree/index.html) | * [Pollution Prevention planning](http://www.ecy.wa.gov/programs/hwtr/p2/index.html) * [Environmentally preferred (green) purchasing](http://www.ecy.wa.gov/programs/swfa/epp/index.html) * Technical assistance and information on safe use of chemicals and toxic products * Support of re-use networks * [Local source control partnership](http://www.ecy.wa.gov/programs/hwtr/lsp/index.html) | * [Pollution Prevention planning](http://www.ecy.wa.gov/programs/hwtr/p2/index.html) * [1-800-Recycle Hotline](https://fortress.wa.gov/ecy/recycle/UISearch/ServiceSearch.aspx) * [E-Cycle](http://www.ecy.wa.gov/programs/swfa/eproductrecycle/) and [LightRecycle](http://www.ecy.wa.gov/programs/swfa/mercurylights/) Stewardship Programs * [Solid waste facility assistance](http://www.ecy.wa.gov/programs/swfa/nav/mgt.html) * [Hazardous waste compliance](http://www.ecy.wa.gov/programs/hwtr/managewaste.html) * Permitting hazardous waste facilities * [Local source control partnership](http://www.ecy.wa.gov/programs/hwtr/lsp/index.html) * Most recycling (including organics) and moderate risk waste assistance |
| **Currently, most of Ecology’s work is on end-of-life management activities.** | | |
| \*See Figure 1 for an illustration of the Sustainable Materials Management Cycle. | | |

**[Where We are Now: Waste Management in Washington](#TofC)**

Washington has come a long way from the open burning dumps of the 1960s. This is due to the hard work of solid waste collection companies, other businesses, local and state government, and dedicated citizens. We now have well-run landfills and a comprehensive recycling infrastructure for many products. Overall, more than 85 percent of Washington residents live in areas that provide access to curbside recycling for single-family homes, and most other areas have access to drop-off recycling facilities. Composting programs, including curbside collection, drop-off programs, and affordable backyard compost bins and education, are also available to a large percentage of the state’s population. Our recycling, composting and waste collection programs are some of the most progressive and successful in the country. The state collects almost 50 percent of its municipal solid waste for recycling.

We also have an effective hazardous waste management system. Much progress has been made on the proper management and reduction of hazardous waste in Washington. The large, regulated businesses have up-to-date pollution prevention plans, and more companies are complying with the state’s dangerous waste regulations. Regulated businesses have reduced hazardous waste generation in the state by over 50 percent since 2000.

**Current Trends in Solid and Hazardous Waste**

Over the last 15 years, solid waste generation and recycling/diversion show an overall increasing trend (see Figure 2, below). However, in the past seven to eight years, both appear to have reached a plateau. Waste generation shows a few more dips and rises. The decrease in waste generation in 2008 and 2009 was likely due to the great recession. The increase in waste generation in 2013 may be due in part to increased contaminated soils from clean-up activities, as well as increased wood and yard debris disposal.

Washington has made progress in increasing recycling and diversion of solid waste from disposal overall, but recycling/diversion rates have also leveled out over the past few years. The recycling/diversion trend still shows a slight increase. With the increase in disposal in 2013 and the slight decrease in recycling/diversion, the diversion rate dipped slightly; however we are still diverting more solid waste than we dispose. Per capita trends for solid waste generated and recycled are similar to that for total tons, though disposal has increased less on a per capita basis.

Solid waste includes all discards from homes and businesses, as well as waste from manufacturing, construction, and environmental cleanups. Moderate risk waste (MRW) is included in this graph as well, and includes MRW collected at local government facilities (data is available in our [annual report](http://www.ecy.wa.gov/programs/swfa/solidwastedata/report.html)). Solid wastes are either sent to a landfill, incinerated, or diverted to other uses such as recycling and reuse.

Recycling includes, but is not limited to, curbside-collected materials such as cans, bottles and newspapers; commercial recyclables collected, such as metal and cardboard; and other materials collected for recycling, such as construction and demolition debris, organic materials such as food and yard waste, and electronics. Other uses that divert materials from landfills include energy markets such as anaerobic digesters, retreading (tires), and reuse.

The generation of “recurrent hazardous waste” has decreased almost 50 percent between 2000 and 2013 (Figure 3). Recurrent hazardous waste is produced by regulated businesses that regularly use hazardous materials in their business practices. It reflects the approximately 1,000 businesses that generate more than 2,640 pounds each of hazardous waste per year and are required to have pollution prevention plans. It does not include the 2,800 annual reporters that are smaller waste generators or who are not required to report waste amounts. The downward trend in recurrent hazardous waste generation is due in large part to a variety of waste reduction strategies employed by businesses and other organizations.

While the generation of recurrent hazardous waste has decreased, the total amount of recurrent hazardous waste that is recycled has remained fairly constant. This means Washington is recycling an increasing percentage of this hazardous waste stream. When compared to the decrease in hazardous waste generation, the percentage recycled has increased substantially, from 16 percent in 2000 to 24 percent in 2013.

In the past decade, at least eight Washington state laws have banned or limited toxics in products. Two additional laws have created producer take-back programs for products with toxic components (Figure 4). This emerging trend reinforces the need to take a life-cycle approach to our state waste plan update.

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| **Figure 4: Recent Laws Addressing Toxics in Products** |
| * **Mercury reduction**, RCW 70.95M (2003) * **Electronic product recycling,** RCW 70.95N (2006) * **PBDE flame retardants**, RCW 70.76 (2007) * **Children’s safe products**, RCW 70.240 (2008) * **Lead wheel weights**, RCW 70.970 (2009) * **Brake friction material**, RCW 70.285 (2010) * **BPA in sports bottles**, RCW 70.280 (2010) * **Mercury-containing light recycling,** RCW 70.275 (2010) * **Copper boat paint**, RCW 70.300 (2011) * **Coal tar sealant**, RCW 70.295 (2011) |

For more information on current trends, see the [Beyond Waste Progress Report](http://www.ecy.wa.gov/beyondwaste/bwprog_front.html) and the [Solid Waste in Washington Annual Report](http://www.ecy.wa.gov/programs/swfa/solidwastedata/report.html).

Although we have safer landfills, good waste collection systems, and many recycling opportunities, we must continue to reduce waste, and address the overuse of resources and toxic releases to the environment. This is why our state solid and hazardous waste plan needs to consider where we want Washington to be in 2035, and establish goals and actions to get us there.

**Current Trends in Washington Population and Demographics**

Waste generation trends and management practices are influenced by population and demographics. As of this writing, there are 6.9 million people in the state. By the end of this five year planning period, state population is projected to increase to almost 8.5 million. The Office of Financial Management estimated that 27 percent of the state’s population in 2010 was made up of people of color. This is an increase from 20 percent in 2000. The Hispanic population is the fastest growing in Washington, representing 11 percent of the population in 2010.[[6]](#footnote-6)[1] Currently, the majority of residents in Franklin and Adams counties are Hispanic. Further, Washington is one of the top ten states with the largest and fastest growing populations of residents with limited English proficiency (LEP).[[7]](#footnote-7)[2] African American, American Indian, Alaskan Native, Asian, and Pacific American populations have all increased in the last decade.

More people mean more waste, and increased demand for services. Changing demographics need to be accounted for in providing those services. Waste services will need to make the needs of those with limited English proficiency a greater priority.

[**What Washington Will Look Like in 2035**](#TofC)

Visionary goals for 2035, adapted from the 2004 and 2009 state waste plans and revised for this plan update, are listed below. They depict Washington’s future if we are successful in implementing this, and future, state plans.

* **Sustainable materials management is commonplace**. Reuse and recycling of plastics, metals, glass, wood, organics, and other materials is widespread and supported by robust markets. Recyclable materials are source-separated from waste, and contamination is minimized.
* **Safe products, buildings, and services are designed for human, economic, and environmental health and are readily available.** Products, buildings, and services are designed to minimize hazardous materials throughout their life cycles and green chemistry[[8]](#footnote-8) is the norm. Most toxic threats to human health and the environment from hazardous materials have been eliminated. Consumer demand for effective, environmentally preferable products, buildings, and services is widespread. Products that present a risk from toxic components are managed in a product stewardship system, until safer ingredients can be substituted.
* **A stable and long-term solid waste financing system is in place that supports and enables the transition to sustainable materials management.** Full costs for managing products, materials and wastes from design and manufacture to end-of-life, are accounted for in both disposal and product prices. Funding for waste reduction and recycling programs does not solely rely on waste disposal fees.
* **State regulations and infrastructure support the reduction and eventual elimination of waste and toxics**. Local waste management plans and pollution prevention plans focus on sustainable materials management and toxics reduction. Solid and hazardous waste management facilities promote convenient reuse and recycling in addition to safe disposal, and are in compliance with state and local regulations.
* **Washington businesses thrive and provide sustainable jobs.** Businesses prosper in the domestic and global marketplace as they eliminate waste and hazardous materials from products and services, replacing them with safer materials. Consumer confidence increases, while risk and liability to consumers, waste-management workers, and others decreases.
* **State and local government measurement systems for waste and toxics have improved**. Data gaps have been identified, their significance determined, and important gaps have been filled. Existing data collection has been strengthened and provides useful information for stakeholders. Data are used to direct programs and priorities.

**Greenhouse gas emissions have decreased due in part to wiser management of material resources.** Reduced consumption and increased reuse and recycling of resources are recognized as key means to conserve energy use and reduce associated greenhouse gas emissions. Innovative uses for organic materials help sequester carbon in soils, create bio-energy, and provide food for thriving plants. Landfills emit less methane gas and the volume of leachate is reduced due to decreased disposal of organic materials.

**All Washington residents experience environmental equity and justice.**  Disparity has been eliminated with exposure to toxics through people’s jobs and homes. There is equitable access for all residents to solid and hazardous waste services.

**[Progress on the 2009 State Plan](#TofC)**

The Beyond Waste Plan, first published in 2004, is now ten years into implementation. Much progress was made during the first five years of the plan. Of the original 74 milestones, 25 were completed and some progress was made on 38 others. The plan was revised in 2009 and expanded to 93 milestones. The 2008 recession reduced financial resources to work on implementing the plan, and during the 2011-2013 biennium, budget restrictions further limited work. Of the 93 milestones, five were completed. Significant or some progress was made on 53 others (Table 2).

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| **Table 2: Progress on the 2009 State Solid & Hazardous Waste Plan Milestones** | | | | |
| **Plan Section** | **Number of Milestones** | **Completed** | **Significant or Some Progress** | **Little or No Progress** |
| **Industries Initiative** | **17** | **0** | **9** | **8** |
| **Small Volume Hazardous Materials & Waste Initiative** | **15** | **0** | **7** | **8** |
| **Organics Initiative** | **13** | **0** | **8** | **5** |
| **Green Building Initiative** | **11** | **0** | **8** | **3** |
| **Measuring Progress Initiative** | **7** | **2** | **4** | **1** |
| **Hazardous Waste Issues** | **11** | **2** | **9** | **0** |
| **Solid Waste Issues** | **19** | **1** | **9** | **9** |
| **Total** | **93** | **5** | **54** | **34** |

Completing or making progress on plan milestones resulted in the following accomplishments:

* Fewer toxics are found in products sold in Washington due to legislation restricting use of certain chemicals. This includes toxics found in vehicle brakes, tire wheel weights, drink bottles, parking lot sealants, packaging, and some children’s products.
* A Green Chemistry Center, with a working board and staff, has been established in Washington through EPA grant funding. The new Green Chemistry Center will facilitate research, commercialization, technical assistance, and education in green chemistry and engineering.
* Washington’s highly successful electronics-producer-funded E-Cycle program, which started in January 2009, recently celebrated five years of service and has recycled more than 250 million pounds of TVs, computers and monitors.
* There is increased support and interest in environmentally preferred purchasing (EPP), or green purchasing. In Washington this includes an EPP provision in a purchasing reform bill and a prohibition of purchases of products containing polychlorinated biphenyls (PCBs). A joint contract with Oregon allows government agencies in both states to purchase only green janitorial supplies.
* Ecology promoted green building, provided technical assistance, and worked to remove barriers. Washington continues to be a national leader in the green building arena in part because of these efforts.
* More than 80 percent of local solid or hazardous waste plans include, or are planning to add, concepts and programs for waste reduction and recycling that support the 2035 Beyond Waste Vision. Many local governments use Ecology-managed grant funds to implement these programs.
* More Washington businesses and governments are addressing hazardous substance reduction in their pollution prevention plans and have increased awareness of toxics in products. As a result of the improved hazardous substance information in the plans, Washington can better target areas to assist businesses in achieving toxics reductions in products and processes.
* Product stewardship legislation was passed for mercury-containing lights. As a result, a producer-established recycling program began January 2015. This program allows residents to recycle fluorescent lights from their homes, keeping highly toxic mercury out of the environment.
* Businesses are better at preventing releases of dangerous waste into the environment. They better understand the regulations due to the greater number of compliance visits.
* Composting and other methods of recycling organic material continue to increase. More organics are now diverted than disposed. This is due to state grant programs and efforts of local governments, composting companies, residents, and businesses.
* Ecology established the local source control (LSC) program. Local government staff assist small businesses in their communities on proper hazardous waste management and stormwater pollution prevention. In the past four years, (2010-2014) small businesses corrected more than 9,000 potentially harmful environmental practices that were identified by LSC staff during site visits.

For more information on progress, go to the [Beyond Waste Status Report, May 2014](https://fortress.wa.gov/ecy/publications/SummaryPages/1404010.html), the [Summary Status Report](https://fortress.wa.gov/ecy/publications/SummaryPages/1404024.html), or view the annual [Beyond Waste Progress Report](http://www.ecy.wa.gov/beyondwaste/bwprog_front.html).

**[Plan Update Process and Structure](#TofC)**

**Plan Update Process**

As with the development of past plan updates, Ecology consulted local governments, businesses, citizens, and environmental organizations across the state. However, with this update, through meetings and an online survey, we gathered input on what stakeholders wanted in the plan update before we drafted any content. We used this input to create a first draft, which we circulated for public input. We used comments on the first draft to write this second draft. Comments can be viewed on the website: [www.ecy.wa.gov/wasteplan/](http://www.ecy.wa.gov/wasteplan/).

We received many ideas and suggestions. We listened carefully and have worked hard to use this input. We followed the direction of our guiding statutes, especially in areas where stakeholder input conflicted. Two key things we heard from stakeholders were to better represent the current system, and to focus on the big picture, not just on waste at end of life. The materials management approach helps us do both these things and supports the hierarchy in our guiding statutes.

**Plan Structure: Past and Present**

In the 2004 and 2009 versions of the State Solid and Hazardous Waste Plan (Beyond Waste), Ecology identified five initiatives to focus on to best pursue the plan vision. They also included current issues with solid and hazardous waste management. In this 2014 plan update, we have altered this structure, as illustrated in Table 3.

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| **Table 3: Structure of Current and Past State Waste Plans** | | |
| **2014 State Waste Plan Sections** |  | **2004 & 2009 State Waste Plan Sections** |
| Managing Hazardous Waste and Materials  *(includes MRW)* |  | Industries Wastes  *(regulated hazardous wastes)* |
| Managing Solid Wastes and Materials  *(includes building materials)* |  | Small Volume Hazardous Materials and Wastes *(MRW)* |
| Reducing Impacts of Materials and Products *(includes some MRW, building materials)* |  | Organic Materials |
| Measuring Progress |  | Green Building |
| Providing Outreach and Information |  | Measuring Progress |
|  |  | Current Hazardous Waste Issues |
|  |  | Current Solid Waste Issues |

With this new structure, our goals are to simplify, be more inclusive, and make the plan easier to use. This new structure also reflects changing times and concerns. Some of our work has changed due to funding or shifting priorities. An example is green building: focus on overall green building practices has shifted to focusing more on building materials. Another example is the increasing emphasis on toxics in products as seen in Figure 4.

These sections broadly address major areas and list goals and actions[[9]](#footnote-9). Section one addresses regulated hazardous waste generators, pollution prevention planners, and moderate risk waste. Section two deals with the variety of solid waste and materials work. Section three focuses on activities to improve the materials that eventually become components of products or waste, by focusing on what is used and produced. Section four addresses data needs, and section five focuses on outreach and information needs for both solid and hazardous waste and materials.

While the initiative structure has changed, the key concepts are still addressed. The focus remains on reducing wastes and toxic substances, as well as safely handling wastes. Washington State’s interest in climate change, the health of Puget Sound and other Washington waters, and the need to reduce toxic threats has only increased in the past five years. Therefore, the state waste plan also continues to connect to these key issues, and to be about more than just waste.

**Plan Goals and Actions**

The 2014 state waste plan update contains 53 goals with 175 supporting actions. The goals reflect where we would like to be in five years, and the actions are steps to help us get there. Most of the goals and actions are meant to provide direction for Ecology, working with our stakeholders. They are centered on areas of Ecology’s potential control and influence. However, the actions are also intended to provide guidance to other governments, organizations and the private sector, and may be carried out by others as well as Ecology. A few can only be accomplished by entities other than Ecology. Therefore, the goals and actions are written broadly for application to many audiences.

To connect the work in the plan to the materials management cycle, we have indicated in parentheses which part of the cycle the goals relate to: Design, Use, End-of-Life Management or System-wide.

The goals and actions stem from stakeholder input as well as staff expertise. They represent work to move us into a future of less waste and toxics, and work to keep the current system functioning well.

Many of the goals and actions are in addition to and build on our regular existing and ongoing work. Therefore, performing the work in the plan is resource dependent. The plan update is intended to provide a flexible list of options that support movement toward the plan’s vision. A summary of overarching priorities is below.

**[Priorities for the Plan](#TofC)**

The following priorities will both move us closer to the vision and ensure the current system works well. In order to work effectively on some of these priorities, we will need restored or additional funding.

* Move upstream: increase our focus on manufacturing and use phases, not just on end-of-life issues.
  + Strive to gather data that address the full flow of materials from manufacture, purchase and discard.
  + Promote environmentally preferred purchasing and third-party labels.
  + Enable more reuse of materials and products.
* Reduce toxic threats in products and industrial processes.
  + Encourage less toxic products and industrial processes through better design.
  + Promote the use of alternatives assessments and green chemistry to find safer alternatives for toxics in products and discourage the use of toxics in products during the design phase.
  + Increase local partnerships to work on toxics source control.
  + Encourage product stewardship for toxic or hard-to-handle products.
  + Restrict the use of the most toxic chemicals where safer alternatives exist.
* Increase efficiency of recycling (including organic processing) systems, and maximize effectiveness of existing solid and hazardous waste infrastructure.
  + Address curbside recycling contamination and material recovery facility system loss.
  + Reduce sham recycling and provide enforcement.
  + Ensure clean, marketable end-products from organics and recyclables.
  + Focus on facility compliance, technical assistance, and enforcement.
  + Increase capacity and diversity of recycling (including organics processing) infrastructure.
* Mitigate climate change.
  + Increase use of processed organics to sequester carbon.
  + Increase reuse, recycling, and waste reduction.
  + Prevent food waste.

Ecology will further prioritize work in program planning efforts, based on internal resource availability, initiatives by key stakeholders, and opportunities to partner with other organizations and efforts. We will undertake work on the highest priorities as resources allow. We will also be guided by our key principles and strategies, listed in the next section.

**[Key Principles and Strategies](#TofC)**

Some key principles and strategies are common to all the plan’s goals and actions. These are fundamental for the success of the plan’s implementation and should be kept in mind as plan goals and actions are implemented.

1. Build on what’s already working, such as maximizing the use of existing infrastructure.
2. Focus solutions on designing sustainable products and processes.
3. Take advantage of momentum and complementary actions.
4. Create collaborative partnerships with a variety of players.
5. Work to remove barriers, develop pilot projects, and change behavior with incentives.
6. Lead by example in Government, especially through research, purchasing power, and model demonstration projects.
7. Minimize unintended consequences of actions by taking account of environmental justice, economic viability, and people’s quality of life.
8. Evaluate programs and measure progress.
9. Strive for continuous improvement.

**COMMENTS on FRAMEWORK AND FOUNDATIONS**

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**[Plan Goals and Actions](#TofC)**

The goals and actions that follow are for the next five years. Goals are where we want to be in the future, and the actions will help us get there.

**Managing Hazardous Waste & Materials**

**[Introduction](#TofC)**

Properly managing hazardous materials and wastes helps protect our waterways and Puget Sound from polluted runoff. Rainwater washes spilled substances into storm drains that flow into rivers, streams, lakes and Puget Sound. When we do not properly manage hazardous waste contaminated sites result. Cleaning up these sites is expensive for businesses and taxpayers.

Most of the authority to regulate dangerous waste in the state falls under the auspices of Ecology’s Hazardous Waste and Toxics Reduction (HWTR) Program. The program activities are arranged into three main subject areas: pollution prevention (P2), compliance with regulations, and permitting/corrective action at facilities that manage hazardous wastes.

Even small amounts of hazardous waste can cause big problems. Local government, under the authority of state laws and regulations, primarily manages small quantities of hazardous wastes created by businesses or households. This waste is also called moderate risk waste.

**State Regulatory Structure: Laws and Their Implementation**

**Pollution Prevention**

Washington’s Waste Reduction Act (Chapter 70.95C RCW) passed in 1990. Since then, businesses or public agencies (such as a military bases, prisons, or public transportation facilities) 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 Pollution Prevention (P2) plans and submit them to Ecology for approval.

The plans must 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 hazardous wastes that are the easiest to reduce rather than those that are the most toxic.

Overall, the state has greatly benefited from the P2 program because pollution prevention makes economic sense. Since 2005, Washington businesses have saved an estimated $56 million due to P2 planning implementation. That amount may be low, because businesses are not required to report cost savings. Hazardous waste generation has decreased since the P2 program began, but the rate of decline has slowed down in recent years. (Data: [recurrent hazardous waste generated and recycled in Washington](http://www.ecy.wa.gov/beyondwaste/bwprogHW.html).)

**Compliance and Compliance Assistance**

The state authority for managing hazardous waste derives from the [Federal Resource Conservation and Recovery Act or RCRA](http://www.epa.gov/epawaste/inforesources/online/index.htm) (1980) and the state Hazardous Waste Management Act, [Chapter 70.105 RCW](http://app.leg.wa.gov/rcw/default.aspx?cite=70.105) (1976). The state Dangerous Waste Regulations ([Chapter 173-303 WAC](http://app.leg.wa.gov/WAC/default.aspx?cite=173-303)) are the foundation of Ecology’s compliance efforts. Businesses must file an annual report with Ecology if they generate more than 220 pounds of hazardous waste in any month or 2,640 lbs per year. These businesses classify as medium or large quantity generators, or MQG’s and LQG’s, depending on the amount of hazardous wastes they generate.

Ecology employees do formal inspections of, and informal visits to, hazardous waste generators, centered on the regulations. Ecology is responsible for inspecting more than 1,000 businesses that are medium and large quantity generators. In addition, Ecology inspectors must also respond to referrals from local government and complaints from the public.

Business compliance with regulations has increased over the last few years. This is partly because increased staffing of compliance inspectors has allowed for more frequent inspections, which has resulted in greater compliance. (Data: [business compliance with dangerous waste laws](http://www.ecy.wa.gov/beyondwaste/bwproghwCompliance.html).)

**Permitting and Corrective Action**

Ecology issues waste management permits to facilities that treat, store, or dispose (TSD) of hazardous waste. These facilities help industries and local government safely manage and dispose of the hazardous waste they have generated. The permits ensure that facility design, construction, maintenance, and operations protect people and the environment. A hazardous waste management or TSD facility must meet the conditions of its permit and comply with state and federal regulations during its operation, when it ceases operating, and when it closes. Under a process called “corrective action” releases of hazardous wastes are cleaned up from TSD facilities during operation.

Washington currently has 14 active TSD facilities. When these facilities close, Ecology ensures they have a required closure plan in place to handle the end of their waste management activities effectively. Environmental contamination found at any time before closure requires a corrective action cleanup plan.

Ecology also oversees closure and necessary cleanup at active and former facilities. TSD facilities, mostly located near Puget Sound, are often contaminated and require some form of cleanup. Corrective actions are currently going on at 41 sites. These properties are cleaned up under the requirements of [RCW 70.105D](http://app.leg.wa.gov/rcw/default.aspx?cite=70.105D) Hazardous Waste Cleanup Act—Model Toxics Control Act. There is good progress on cleaning up contamination at TSD’s. (Data: [cleaning up contamination at TSD facilities](http://www.ecy.wa.gov/beyondwaste/bwproghwTSDCleanup.html))

**Small Volume Hazardous Materials and Wastes**

The Hazardous Waste Management Act ([RCW 70.105](http://app.leg.wa.gov/rcw/default.aspx?cite=70.105D)) and the Solid Waste Management Reduction and Recycling Act ([RCW 70.95](http://app.leg.wa.gov/rcw/default.aspx?cite=70.95C)) authorize the regulation of Moderate Risk Waste (MRW). Two types of waste fall under MRW: household hazardous waste (HHW) and small quality generator (SGQ’s) waste. Household residents generate household hazardous wastes. Businesses that produce less than 220 pounds of hazardous waste per month generate small quantity generator wastes.

The term moderate risk waste can be misleading. These wastes are not necessarily moderate in risks to human health and environment or moderate in quantity, when the number of households and small business sources are considered.

There are more small quantity generators (or SQGs) than large and medium quantity generators. Although SQG’s collectively generate a significant amount of hazardous waste, Ecology employees are not required to, and typically do not, inspect SQG’s due to staffing constraints. Local governments, however, have the authority to oversee and assist these SQGs. That is why Ecology asked for and received authorization from the 2008 Legislature to establish the Local Source Control Program (LSC). Through LSC, local inspectors are hired to visit SQG’s and provide technical assistance. LSC inspectors have completed more than 17,000 technical assistance visits, helping SQG’s properly manage and reduce wastes. In addition to LSC, some counties or cities run their own technical assistance programs for SQG’s.

For household hazardous wastes, local governments operate both fixed collection facilities and may run collection events. Some of these facilities also take SQG wastes, or the business may contract with a private company to collect their waste. Ecology estimates that current MRW collection programs manage a small portion of HHW and SQG wastes (see the [solid waste annual report](http://www.ecy.wa.gov/programs/swfa/solidwastedata/report.html) for data). Unless managed through an MRW program, most MRW is commingled with other solid wastes and then landfilled or incinerated. This is legal but not optimal. While capturing more MRW is desirable, local governments are already having increased difficulty paying for costly MRW facilities and programs.

**Future Directions: What’s Next?**

In the past, Ecology’s efforts with P2 planning focused on assisting businesses and government facilities to reduce waste. In the future, more focus will be on getting facilities to use safer substitutes for toxic inputs in their processes through a variety of methods.

Ecology has used lean techniques to streamline its hazardous waste compliance efforts. These efforts have been very successful in achieving more frequent and effective inspections and have subsequently led to higher compliance rates. . Hopefully, compliance rates will continue to increase in the future due to increased technical assistance and educational efforts.

The future may also bring direction for Ecology to keep certain toxics out of products and industrial processes, changing the focus of inspectors’ jobs over time. There also may be efforts where specific highly toxic chemicals are the focus for reduction or substitution. With such focus, inspectors, including LSC staff, might visit large numbers of facilities and encourage them to use specific safer substitutes for toxic chemicals.

In the future, TSD’s may assist more with reuse or recycling of certain chemicals. Due to increased public awareness of TSD facilities, Ecology and private businesses will be more involved with community outreach efforts on the operation and closure of TSD’s.

In addition to active TSD’s, there are the 41 corrective action sites. Ecology expects to have the 41 cleanups finished, or in maintenance mode, by 2020. Once cleaned, these properties provide opportunities for habitat restoration, economic development, and public recreation.

As state and local funding for hazardous waste management shrinks, which is the current trend; there will probably be fewer public facilities for managing MRW. Getting more toxics out of products will help to lessen the need for MRW facilities, but it will not eliminate the need for careful recycling and disposal of certain products such as pesticides and used motor oil in the near term. It remains unclear whom or what programs will help fill this gap. Product stewardship programs, where the products’ producers pay for collection and recycling or safe disposal of their hazardous products, will continue to be promoted by advocates as one possible solution.

Ecology is interested in expanding the Local Source Control Program, especially for the counties bordering the Columbia River. LSC assists with the management of SQG wastes, but not household hazardous waste.

Reducing and safely managing hazardous waste and materials is important because it saves money, protects people and the environment, helps prevents expensive clean ups, and is good for the economy. It will take unique partnerships between Ecology, local government, and private businesses to be successful in toxic reduction and hazardous waste management efforts.

**COMMENTS on HAZARDOUS WASTE AND MATERIALS INTRODUCTION**

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**Hazardous Waste and Materials Goal and Actions**

**[Pollution Prevention (P2) Goals and Actions](#TofC)**

**GOAL 1: Hazardous waste generators will significantly reduce chemical use, waste, emissions, and costs by successfully implementing high-quality Pollution Prevention (P2) plans and other actions. (System-wide)[[10]](#footnote-10)**

1. **Action:** Survey (or hold a series of interviews or focus groups) the Pollution Prevention (P2) planning facilities to assess what factors would encourage plan implementation. Use this survey as part of the research to help determine which staff actions will lead to environmentally significant and effective P2 plan implementation.
2. **Action:** Develop an indicator(s) that measures progress toward statewide P2 goals on a biannual or quarterly basis.
3. **Action:** Increase Ecology staff focus on implementing P2 opportunities that reduce waste or the toxicity of industrial processes and products.
4. **Action:** Provide training, chemical profile assistance, and recognition to businesses and public agencies to encourage reduction of toxics in industrial processes and products. Expand the use of successful assistance programs such as Safer Chemistry Challenge, [Lean and Green](http://www.ecy.wa.gov/programs/hwtr/lean/) and [engineering assistance](http://www.ecy.wa.gov/tree/index.html) to help businesses reduce toxics.
5. **Action:** Encourage the use of Global Reporting Initiative (GRI) as a framework for advancing sustainable practices.
6. **Action:** Update the P2 Planning rule (Washington Administrative Code (WAC) 173-307) to increase the list of hazardous substances that facilities will need to include in their plans, add other substances determined by the director to present a threat to humans or the environment, and make other appropriate changes, such as eliminating obsolete language.

**COMMENTS**

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**GOAL 2: Pollution Prevention planning facilities and other industries will use cleaner, more sustainable manufacturing processes and produce more sustainable products. (Design)**

1. **Action:** Train Ecology staff to understand business needs, improve services, and better market the benefits of P2 opportunities and sustainability.
2. **Action:** Develop and implement state or regional efforts to encourage use of safer chemical alternatives and processes, in partnership with various business associations, and interested local jurisdictions.

**COMMENTS**

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**[Compliance and Compliance Assistance Goals and Actions](#TofC)**

**GOAL 1: Large-Quantity Generators (LQGs) and Medium-Quantity Generators (MQGs) will comply with the dangerous waste rules and remain in compliance. (End-of-Life)**

1. **Action:** Continue to inspect every MQG and LQG at least once every three years and work to make these inspections as effective as possible for both the business community and Ecology inspectors.
2. **Action:** Research how other states publicize the compliance status of facilities and identify what actions Ecology may want to pursue on this issue.
3. **Action:** Research how to increase compliance inspector efficiency, including examining the costs and benefits of possible tools and additional training for inspectors. Continue to gather existing data to evaluate effectiveness of inspections. As part of this research, consider how to increase Ecology’s effectiveness when English is not the first language spoken by business owners and employees.

**COMMENTS**

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**GOAL 2: Communication about compliance issues will improve, so it is easier for facilities to make corrections. (Use, End-of-Life)**

1. **Action:** When appropriate, conduct sector campaigns to inform select businesses about compliance issues, P2, and safer chemical alternatives. When applicable, partner with other regulatory agencies, air authorities, local governments, small business assistance programs and Local Source Control (LSC) on these campaigns.
2. **Action:** Provide cost-effective training to generators.
3. **Action:** Encourage applicants for new business licenses, using handouts and checklists, to consider their material inputs and outputs and, when possible, use less-toxic and other environmentally preferable materials.

**COMMENTS**

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**GOAL 3: The Local Source Control (LSC) program, and other small business hazardous waste and stormwater pollution technical assistance programs, will be expanded and fewer environmental issues will be found at facilities visited by staff. (System-wide)**

1. **Action:** Align local source control and other small business technical assistance efforts with Ecology’s toxics reduction strategy and chemical priorities.
2. **Action:** Expand coordination and collaboration between entities providing assistance and services to small businesses to ensure effective and efficient use of resources.
3. **Action:**  Request additional legislative funding for Local Source Control so interested local entities can sustain or increase small business technical assistance visits in urban areas and priority watersheds.

**COMMENTS**

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**[Permitting & Corrective Action Goals and Actions](#TofC)**

**GOAL 1: All treatment, storage, and disposal facilities (TSDs) will comply with regulations and operate safely. (End-of-Life)**

1. **Action:** Check in with treatment, storage, and disposal facilities (TSDs) more frequently than current practices, and engage the TSDs in information sharing on compliance with regulations and how to operate in a safe manner.
2. **Action:** Improve coordination with local fire departments and other agencies that inspect TSDs to ensure consistent and clear messages are given to TSDs. Provide training to TSDs and other partners so they understand the various regulatory roles and how to comply with the regulations.
3. **Action:** Ensure permits are understandable to all parties so it is clear what needs to be accomplished by the facility to achieve compliance.

**COMMENTS**

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**GOAL 2: By 2020, 95 percent of corrective action sites permitted by Ecology will safely manage environmental contamination. (End-of-Life)**

1. **Action:** Develop an implementation plan to help figure out tools and options to reach the U.S. Environmental Protection Agency (EPA)-mandated goal of controlling environmental contamination at 95 percent of corrective action sites by 2020.
2. **Action:** Develop a Memorandum of Understanding (MOU) to share information with other state agencies that jointly work with Ecology on corrective action, such as the Washington State Department of Health.

**COMMENTS**

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**GOAL 3: In the next five years, Ecology will issue permits for all sites and facilities that reflect current operations and ensure facilities comply with permit conditions. (End-of-Life)**

1. **Action:** Ensure adequate funding for permitting activities using cost-recovery and other mechanisms, including funding for engineering review and records management.
2. **Action:** Finish permit application guidance and make it available electronically, and provide permit-writing training on this guidance for Ecology staff.
3. **Action:** Prioritize follow up actions for all permits.

**COMMENTS**

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**GOAL 4: Parties interested in permitted facilities and corrective action sites will know who and how to communicate regarding the latest information. (End-of-Life)**

1. **Action:** Maintain and promote every site’s information on Ecology’s website.
2. **Action:** Develop an effective communication and public participation plan for every corrective action site. When appropriate, plans should include site-specific messaging.
3. **Action:** Train corrective-action site managers on communication skills and appropriate ways to share information with interested parties and the public. Ensure public has access to staff.
4. **Action:** Ensure meaningful access, including increased attention to limited English proficiency (LEP) audiences, in the development and delivery of corrective action communications.
5. **Action:** Develop an electronic system for submitting, storing and providing public access to corrective action forms.

**COMMENTS**

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**GOAL 5: Dangerous waste facilities and used oil processors will offer safe recycling. (End-of-Life)**

1. **Action:** Ensure each facility has an adequate closure plan and financial assurance. When appropriate, encourage additional recycling instead of waste disposal. Encourage the development of material management plans for discards, residuals and byproducts.

**COMMENTS**

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**[Small Volume Hazardous Materials and Wastes](#TofC) *(Moderate Risk Waste)***

**GOAL 1: Until toxic substances are phased out of products, and use of hazardous materials declines, moderate risk waste (MRW) collection will be maximized. (End-of-Life)**

* 1. **Action:** Encourage reuse and recycling of as much moderate risk waste (MRW) as possible; look for opportunities to increase reuse and recycling as new technologies and markets develop for MRW materials.
  2. **Action:** Working with local governments and waste collection companies, research models for curbside collection of some common MRW items and see if they are safe, efficient, economically feasible, and easily replicable.
  3. **Action:** In cooperation with stakeholders, evaluate the existing collection system’s ability to capture certain MRW materials and explore options to increase collection and recycling.
  4. **Action:** Increase education and outreach efforts about MRW services and safe handling and disposal to residents and small businesses.
  5. **Action:** As part of the WAC 173-350 update, identify regulatory barriers and recommend changes that could maximize collection opportunities for MRW materials.

**COMMENTS**

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**GOAL 2: More MRW locations and programs will provide increased services for residents, businesses, and underserved populations. (End-of-Life)**

* 1. **Action:** Increase collection efficiencies by encouraging MRW facilities and events to be **“**one-stop shops” for disposal, reuse, recycling, product stewardship and other take-back programs, as appropriate.
  2. **Action:** Actively support extended producer responsibility programs for toxic or hard-to-handle materials as a way to increase collection and recycling opportunities across the state.
  3. **Action:** Study and promote options to increase MRW services in areas that are underserved, and for multi-family, minority populations, and small businesses.

**COMMENTS**

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**GOAL 3: MRW facilities will be properly permitted and in compliance with applicable laws and rules. (End-of-Life)**

* 1. **Action:** Ecology staff provide ongoing technical assistance to facilities and health departments and encourage routine inspections of all MRW facilities by local health departments.
  2. **Action:** Ecology staff review facility permits and related documents, and facilitate communication about regulatory issues through listservs and meetings.
  3. **Action:** Clarify current MRW facility design and operational requirements through the WAC 173-350 rule update process.

**COMMENTS**

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**Managing Solid Wastes and Materials**

**[Introduction](#TofC)**

Solid waste has undergone a shift in the past decades. The main focus is no longer safely managing landfills. People are more aware that solid waste affects human and environmental health in all phases. Areas of concern range from traditional waste management to the need to manage materials before they become waste.

Materials management, which includes reduction, recycling and safe disposal of waste, provides significant benefits. These include reducing greenhouse gas emissions, protecting water resources, and conserving natural resources. Additionally, there are also benefits to the economy, as reducing waste and recycling can save money and create jobs.

Solid Waste is a broad term that includes waste types from a variety of activities. Waste types include municipal solid waste (from households and businesses), organic materials (yard debris and food waste), and construction and demolition debris (C&D).

Washington’s current solid waste system consists of programs and services provided to residents and organizations by the solid waste industry, manufacturers, government, and non-governmental organizations. These programs and services primarily aim at managing wastes from residents and businesses and are quite successful at protecting the environment and transforming waste into resources.

The primary responsibility for regulating and overseeing the management of solid waste in Washington resides with local governments. Counties, jurisdictional health departments (JHD) and cities share that responsibility. Statute and local codes provide direction. Ecology’s Waste 2 Resources (W2R) program provides assistance and oversight with recycling, composting, waste reduction and disposal. Primary focus includes solid waste handling facility performance, landfill monitoring, providing guidance on local waste plans, and funding projects with grants.

Key partners in managing solid wastes in Washington are the solid waste collection companies regulated by the Washington Utilities and Transportation Commission (WUTC). These companies play a major role in collecting and hauling waste, recyclables and organics, and in operating transfer stations, landfills, waste-to-energy, composting, and recycling facilities.

**State Regulatory Structure: Laws and Their Implementation**

**Solid Waste System Issues**

The main statute governing solid waste is [**RCW 70.95**](http://app.leg.wa.gov/rcw/default.aspx?cite=70.95) **- Solid Waste Management - Reduction and Recycling Act**. In 1984, an amendment added the waste management hierarchy, which placed waste reduction as the highest priority for managing waste, followed by recycling and responsible disposal. In 1989, Washington passed the Waste Not Washington Act, which established a 50 percent recycling goal. In 2011, the state met this goal. See the [Progress Report](http://www.ecy.wa.gov/beyondwaste/bwprog_swGenRec.html) and the [Solid Waste Annual Report](http://www.ecy.wa.gov/programs/swfa/solidwastedata/report.html) for the most recent data. Now that the goal has been achieved, there are questions as to what the new metric should be.

Historically, the financing of the solid waste system has relied primarily on solid waste disposal fees or “tipping fees”. Financial needs include the cost of meeting existing regulatory requirements, long-term care of landfills, and recycling and waste reduction programs. Local governments in particular are concerned about how to sustain funding for programs when the goal is to reduce disposal, the source of most funding.

**RCW 70.95** requires counties to prepare local solid waste plans. These plans are a linchpin of Washington’s solid waste system. Cities can choose to sign onto the county plans or they can create their own plans. Local plan requirements include information about disposal, financing systems, recycling, as well as composting and waste reduction programs, as able. A 2010 update of **RCW 70.95** increased planning requirements for recyclable materials, construction and demolition debris, organic materials, reuse, and waste reduction strategies.

Local plans must be complete and in good standing to receive grant money from Ecology’s Coordinated Prevention Grant (CPG) program. These grants are an important part of local funding for planning and implementation of recycling, reduction, toxics prevention, and solid waste enforcement programs. Use of grants is authorized in **RCW 70.95 and** [**RCW 70.105**](http://app.leg.wa.gov/rcw/default.aspx?cite=70.105) **– Hazardous Waste Management.** The source of the grant funds is the **Model Toxics Control Account (MTCA),** established through [**RCW 70.105D**](http://app.leg.wa.gov/rcw/default.aspx?cite=70.105D)**,** which specifies the use of MTCA funds for local waste plans and programs.

**Solid Waste Materials and Infrastructure**

Washington’s present solid waste system is remarkably successful in many ways, with modern solid waste facilities and advanced recycling and waste reduction programs. Private and public infrastructure has shown flexibility to expand and diversify in response to changing demands of the marketplace, changing technologies, and evolving policies. The waste and recycling streams constantly evolve, so flexibility is vital.

Washington is a national leader in curbside recycling programs. Almost 85 percent of people in single-family homes have access to curbside recycling collection and the rest have access to drop-box recycling. Providing access is required through the local planning requirements in **RCW 70.95**. While most residents of single-family homes have access to curbside recycling programs, there are still many opportunities to increase recycling service to multi-family housing, public spaces and businesses.

Many of the curbside programs now collect commingled materials, where one container holds all recyclable materials. State-of-the-art material recovery facilities, or MRFs, sort these materials. Commingling materials can lead to higher collection rates since the convenience leads to more participation. It can also result in more contamination (non-recyclable items in bins) and more residual waste, when recyclable materials end up in the wrong bale or are sent to the wrong end-user.

Sham recycling, where businesses who claim to collect materials for recycling and instead dispose of them, is a serious concern. Construction and demolition waste, which makes up roughly one-third of the solid waste generated in Washington, is a common target for sham recycling. In 2005, the legislature added requirements for transporters of recyclable materials to **RCW 70.95.** Registration and record keeping is required for all transporters of recyclables, and delivering recyclables for disposal is prohibited.

**The Waste Reduction, Recycling and Litter Control Act (WRRLCA) -** [**RCW 70.93**](http://app.leg.wa.gov/rcw/default.aspx?cite=70.93)provides funding for litter pickup by Ecology Youth Corps, local governments and some state agencies. It also provides funding for waste reduction and recycling programs at Ecology. Since the recession of 2008, a sizable percent of the WRRLCA account has been diverted to other state agencies, leaving no funding for a litter prevention campaign and reducing Ecology’s efforts at litter pick up, waste reduction and recycling work as well.

Most solid waste handling facilities are regulated under [**WAC 173-350**](http://app.leg.wa.gov/WAC/default.aspx?cite=173-350) – **Solid Waste Handling Standards**, which is currently being updated. This update will address needed improvements with a number of facility types.

Municipal solid waste landfills are regulated under [**WAC 173-351**](http://app.leg.wa.gov/WAC/default.aspx?cite=173-351), which has also been updated recently. Over the past 40 years, solid waste disposal has become much safer and far more protective of health, habitat, and natural resources. There are 15 operating municipal solid waste landfills in the state. For disposal amounts and information, see the [Progress Report](http://www.ecy.wa.gov/beyondwaste/bwprog_swGenRec.html) and the [Solid Waste Annual Report](http://www.ecy.wa.gov/programs/swfa/solidwastedata/report.html).

**Organic Materials and Infrastructure**

Organic materials include yard debris, discarded food, and other “wastes” that come from plant and animal sources. These materials make up an estimated 30 percent of Washington’s municipal waste stream. There are many benefits from keeping organic materials out of landfills and turning them into useful products such as compost, bioenergy, or biofuel. The laws and rules governing organics management are found primarily in **RCW 70.95** and **WAC 173-350.**

As early as 1989, **RCW 70.95** encouraged grants and studies to launch composting operations. In 2002, a new goal was added to **RCW 70.95** to eliminate yard debris in landfills by 2012, in areas where alternatives are available and effective. While an increasing number of alternatives exist, this material has not yet been eliminated from landfills.

Many local governments have established a variety of programs to divert organic materials from disposal, from backyard composting to curbside collection, with delivery to large composting facilities. Sending yard and particularly food waste to composting facilities is increasing, leading to issues with odors and contamination from adding non-compostable materials to the mix. In 2013 the organics section of the solid waste handling rule (**WAC 173-350**) was updated to address some of these concerns.

The need for an expanded and diversified organics processing infrastructure is recognized. In 2009, a new section was added to **RCW 70.95** to encourage anaerobic digestion of manure and pre-consumer food waste by allowing for permit exemptions. There are now eight of these digesters operating in the state.

We now divert more organic materials than we dispose; however, a large percent of these potential resources are still landfilled or incinerated. See the [Progress Report](http://www.ecy.wa.gov/beyondwaste/bwprog_swGenRec.html) for more information.

**Future Directions: What’s Next?**

Waste composition is always changing. This change is referred to in the industry as the “evolving ton.” How we manage these materials to maximize their value from a life-cycle or materials management cycle standpoint must evolve as well.

There is growing recognition that a recycling rate may not be the best or only measurement goal. The future will likely contain new statewide goals and measures that focus on all phases of recycling, as well as waste reduction.

As we make progress toward increased recycling and reduced waste, a stable and long-term financing system must be in place to ensure the successful continued delivery of solid waste programs. More research is needed to find alternative funding mechanisms that can meet the needs of urban and rural areas of the state.

Waste reduction and reuse are underutilized but growing, as the many reuse websites illustrate. We must plan for infrastructure to support and encourage even greater waste reduction and reuse in Washington.

While recycling is highly successful in Washington, there is much more to do. Reducing contamination in recycling and organics must be addressed. Ecology has convened work groups around the state to explore these issues and propose solutions, and these efforts will likely grow. Another emerging concern is that packaging materials, which make up much of our residential recycling programs, are changing at a faster rate than recycling programs or facilities can adapt. Discussion between all the players in the system, including packaging designers and manufacturers, is needed.

Problems with sham recycling are leading to more united efforts by state and local government to stop this illegal practice. Concerns about flow control and the hunt for cheap disposal are closely connected to this issue.

Demand for converting excess organic materials into resources such as compost, bioenergy, and biofuels will likely increase, given the many benefits of the end-products. The need to address barriers and issues will also increase.

In a world of diminishing resources, the push to turn waste into resources will continue to grow. But while we strive for less waste overall, disposal facilities will be a critical element of Washington's system of managing solid waste for the foreseeable future. Therefore, efforts to ensure safe and legal disposal remain a priority.

Washington has long been a leader in innovative waste management and will continue to lead. The state will need to expand programs and infrastructure to fill in gaps and support appropriate new technologies.

**COMMENTS on SOLID WASTE AND MATERIALS INTRODUCTION**

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**Solid Waste and Materials Goals and Actions**

**[Solid Waste System Issues Goals and Actions](#TofC)**

**GOAL 1: Ecology and its partners will identify additional mechanisms for financing recycling, diversion, and waste reduction programs. People will better understand the costs and benefits of recycling. Tip fees will better reflect full costs of managing the waste system, including long-term care and closure of waste facilities. (System-wide)**

1. **Action:**  Renew researching solid waste system finance options via universities, other states, and other utility experts in the face of reduced waste and associated tip fees. With stakeholder input, explore current options as well as searching for new ideas. Prepare financing recommendations from current knowledge while working towards finding a long-term funding solution.

**COMMENTS**

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**GOAL 2: The state will adopt new statewide quantitative targets that encourage waste reduction and quality recycling, including for organics, and highest and best use of materials based on environmental and health criteria. (System-wide)**

* 1. **Action:** Working with stakeholders, establish continuous improvement goals for waste reduction, reuse, and recycling (including for organic materials) that promote highest and best use of materials based on economic, environmental and human health criteria, and account for regional differences across the state.
  2. **Action:** Encourage local governments to add goals in local plans, appropriate to their jurisdiction.

**COMMENTS**

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**GOAL 3: Local governments will have current solid and hazardous waste plans and grants that support their waste management needs and work towards reducing waste and toxics, in accordance with local resources. (System-wide)**

1. **Action:** Update the planning guidelines to clarify less burdensome and more flexible planning options to maintain useful, comprehensive plans, and to help maintain plans in current condition.
2. **Action:** Provide planning and grant assistance to help local governments implement programs that are effective for managing their waste streams, meet the needs of local residents, and support the waste management hierarchy including reducing the volume and toxicity of waste, while recognizing geographical differences, challenges and opportunities.

**COMMENTS**

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**[Solid Waste, Materials & Infrastructure Goals and Actions](#TofC)**

*Includes municipal solid waste (MSW), and construction and demolition waste (C&D)*

**GOAL 1: Waste generation will be reduced throughout the system by both businesses and residents. (System-wide)**

* 1. **Action:**  Provide more technical assistance to businesses for reducing solid waste generation, through [Lean and Green](http://www.ecy.wa.gov/programs/hwtr/lean/), [engineering assistance](http://www.ecy.wa.gov/tree/index.html), P2 Planning and other efforts.
  2. **Action:** Increase cooperative planning with the EPA Climate and Materials Management Forum, local governments and others, to address waste, materials, and climate. Promote reduced consumption, reuse, and durable, less wasteful alternatives.
  3. **Action:** Research and support growing reuse, repair and sharing networks and opportunities.
  4. **Action:** Advance building and building material reuse and salvage to reduce construction and demolition waste by promoting design for deconstruction principles, sharing model contract language that requires salvage, and other related efforts.
  5. **Action:** Encourage effective and accountable grant-funded projects that help reduce or prevent waste and toxics.

**COMMENTS**

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**GOAL 2: End-use of curbside collected recyclables will measurably increase; recycling system loss will measurably reduce. (End-of-Life)**

* 1. **Action:** Lead efforts to develop, maintain, and update best management practices designed to yield the highest value within the recycling stream. Focus on minimizing contamination and other systems-loss issues, and improving quality of materials going to end markets, from materials recovery facilities (MRFs) and other recycling facilities. Gather and analyze information on collection, recovery, use, residuals, and end-use manufacturing. Incorporate appropriate findings into WAC 173-350 rule update.
  2. **Action:** Working with trade organizations, solid waste collection companies, local governments and other stakeholders, create and disseminate guidelines to local governments and service providers for what and how materials should be collected in recycling programs. Strive for a consistent base of recyclable materials for curbside with tiered list to accommodate community differences. Address challenging items like plastics and glass.
  3. **Action:** As part of theWAC 173-350 rule update, work on regulatory definitions related to solid waste, recycling and recyclables.

**COMMENTS**

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**GOAL 3: The Northwest will have stronger, more robust recycling markets. (End-of-Life)**

* 1. **Action:** Using the facilities database inventory, map recycling (including C&D) infrastructure, assess market options and share information on recycling opportunities.
  2. **Action:** Study recycling development councils in the northeastern or southeastern United States to explore the benefits of establishing a similar model in the Northwest.
  3. **Action:** Work with state and national trade groups (WRRA, Recycling Partnership, Carton Council) to gain resources and knowledge on improving MRF capacity and capability throughout the state.
  4. **Action:** Expand and create new markets for construction and demolition (C&D) materials to increase recovery of materials for reuse and recycling. Build partnerships within the C&D recycling and salvage industries, and host market development summits, to explore opportunities throughout the state.
  5. **Action:** Use government purchasing power to increase use of recycled content and other environmentally responsible attributes.

**COMMENTS**

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**GOAL 4: Waste and recycling collection systems will be better used and more efficient. More collection and recycling locations and options will exist statewide for currently recycled materials and products as well as those not yet recycled. (End-of-Life)**

1. **Action:** Evaluate the “hub and spoke[[11]](#footnote-11)” recycling model for rural areas, starting with traditional curbside materials.
2. **Action:** Examine models to increase efficiencies of collection services to spread costs and encourage recycling and safe disposal.
3. **Action:** Increase collection efficiencies by encouraging transfer stations to be **“**one-stop shops” for disposal, reuse, recycling, product stewardship and other take-back programs, as appropriate.

**COMMENTS**

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**GOAL 5: Underserved populations and areas will have increased recycling collection services. This includes multifamily, limited English proficiency, minority populations, rural areas, public spaces, and commercial entities. (End-of-Life)**

1. **Action:** Support provision of recycling and waste reduction materials in Spanish and other languages via grants and other avenues.
2. **Action:** Study and promote options to increase recycling services in areas that are underserved, and for multi-family and commercial entities.

**COMMENTS**

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**GOAL 6: Ecology will undertake an effective, comprehensive, litter-prevention campaign and another litter survey. (End-of-Life)**

1. **Action:** Work with stakeholders to revive a litter-prevention campaign and complete a litter survey when adequate funding is restored through the Waste Reduction, Recycling and Litter Control Account (WRRLCA).
2. **Action:** Analyze effectiveness of our litter programs. Research litter programs run by other states and other organizations to look for ways to optimize clean-up and prevention efforts.
3. **Action:** Using litter survey data, evaluate the litter tax based on who pays, what items are most littered, and make recommendations for changes to the tax structure or its administration. Target the most heavily littered materials for prevention efforts.

**COMMENTS**

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**GOAL 7: Focus on marine debris will increase. (System-wide)**

1. **Action:** Study and promote policies that can help address marine debris, especially land-based sources of marine debris; partner with the Marine Debris Task Force and Puget Sound Partnership.

**COMMENTS**

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**GOAL 8: Sham recycling and improper disposal will decrease. (End-of-Life)**

* 1. **Action:** Work with local governments, solid waste collection companies, other transporters and the Washington Utilities and Transportation Commission (WUTC) to address sham recycling. Prepare and providebetter communication to local governments and recycling businesses about recycling laws, requirements, and options for enforcement. Clarify definitions and terms, and assess data tracking.
  2. **Action:** Work with WUTC to ensure implementation of the Transporter Law provisions, with more enforcement by Ecology and others.
  3. **Action:** Discourage residential private property disposal by encouraging jurisdictional health departments (JHDs) to use local ordinances to restrict this practice. Explore changing statute. (Revised Code of Washington 70.95.240(2)(a))

**COMMENTS**

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**GOAL 9: Solid waste handling facilities (permitted and permit-exempt facilities) will operate in compliance with all regulatory criteria. (End-of-Life)**

1. **Action:** Provide ongoing technical assistance to facilities and health departments to help facilities comply with regulations and minimize adverse environmental impacts.
2. **Action:** Update regulations for solid waste handling facilities to clarify classification of inert landfills, limited purpose landfills, and other facilities so that disposed materials are appropriate for each type of facility.
3. **Action:**  Inspect select exempt recycling facilities to verify conditionally exempt status. Find ways to increase oversight of exempt facilities including requesting additional resources.
4. **Action:** As part of the WAC 173-350 solid waste handling standards rule update, work with JHDs and other stakeholders to determine how to best address criteria and oversight for exempt facilities.

**COMMENTS**

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**GOAL 10: Landfills[[12]](#footnote-12) will comply with applicable solid waste rules, including:**

* **Landfills with contamination will be in the process of or done with an acceptable clean-up;**
* **Landfills in post-closure care will be maintained in accordance with a post-closure plan, which includes defined actions for reaching the end of post-closure care;**
* **Landfills will have adequate financial assurance for closure and the predicted post-closure care period. (End-of-Life)**

**Action:** Develop a practical training module (beyond existing industry training options) for Jurisdictional Health Departments to increase their expertise at regulating, permitting, and closing landfills, as well as monitoring financial assurance accounts.

1. **Action:** Evaluate landfill monitoring data and determine whether increased technical assistance or enforcement is needed to bring non-compliant facilities into compliance.
2. **Action:** Work with Toxics Cleanup Program (TCP) to provide local governments more funding and other assistance for cleaning up contaminated landfills.
3. **Action:** Provide assistance and case studies to help landfills successfully reach the end of the post-closure care period.

**COMMENTS**

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**GOAL 11: Staff (both local and state) will be able to assess if closed and abandoned landfills (CALFs) and large illegal dumpsites pose a serious health threat and address those threats as they arise. (End-of-Life)**

1. **Action:** Continue to encourage and support local work on identifying, evaluating and prioritizing CALFs and large illegal dumpsites. Track CALFs in the solid waste facilities database.
2. **Action:** Increase coordination with TCP to provide local governments more funding and other assistance for cleaning up contaminated CALFs and large illegal dumpsites. Help local governments identify other funding sources for addressing CALFs and large illegal dumpsites.

**COMMENTS**

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**GOAL 12: State and local governments will have a better understanding of solid waste energy and material recovery technologies. (End-of-Life)**

1. **Action:** Increase staff expertise in solid waste energy and material recovery technologies, such as pyrolysis, gasification and others, in order to provide technical assistance on the handling of solid wastes in line with the state’s waste management hierarchy.

**COMMENTS**

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**[Organic Materials & Infrastructure Goals and Actions](#TofC)**

**GOAL 1: Ecology and stakeholders will create a beneficial-use hierarchy for residual organic material processing and uses. (System-wide)**

1. **Action:**Convene stakeholders to create a hierarchy for recycled organic materials that promotes organics diversion, greenhouse gas reduction, soil carbonsequestration, water conservation, and a full range of beneficial end uses, from compost to biofuels. Address the different needs, challenges, and opportunities across the state.
2. **Action:** Working with stakeholders, continue to measure and share the impacts of organics management and how they are connected to climate change.

**COMMENTS**

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**GOAL 2: Less food will enter the disposal system; more discarded food will be managed in accordance with the food-waste hierarchy. (Design)**

* 1. **Action:** As a member of EPA’s Food Recovery Challenge (FRC), promote the programs and tools available in both FRC and Food Too Good To Waste (FTGTW) to agencies, businesses and local governments. Share success of local governments who offer FTGTW to their residents.
  2. **Action:** Encourage the use of grants to fund food waste prevention programs. Promote EPA’s programs when updating local solid waste plans or writing grants.
  3. **Action:** Work with others to support getting edible, non-standard, discarded food into distribution programs and other beneficial uses.
  4. **Action:** Develop metrics for reporting how much edible food moves from “wasted” to “consumed” by eating or other beneficial end uses (food waste prevented and reduced).

**COMMENTS**

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**GOAL 3: The use of organically derived soil amendments will increase, reducing the need for pesticides and herbicides. (System-wide)**

* 1. **Action:** In conjunction with integrated pest management and other sustainable landscaping programs, promote the use of soil amendments derived from processed organic materials as a means to improve plant and soil vitality and reduce the need for pesticides and herbicides.
  2. **Action:** Overcome financial and other barriers to getting more soil amendments made from processed urban organics to rural agricultural applications, and local uses as well.

**COMMENTS**

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**GOAL 4: Agricultural systems will need less water due to increased use of compost and other organically derived soil amendments. (System-wide)**

1. **Action:** Work with stakeholders to support the use of quality, organically-derived soil amendments (such as compost and biochar) to increase soil organic matter and moisture-holding capacity, protect soil and plants against drought conditions, and reduce water use and runoff.

**COMMENTS**

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**GOAL 5: The value of converted organics as storm and surface water filtration media will be better understood, resulting in increased use. (Use, End-of-Life)**

* 1. **Action:** Collaborate with institutions of higher learning, storm and surface water management professionals, conservation districts, and regional organizations to determine the ability of compost, biochar, and other converted organics to reduce toxins and suspended solids in storm and surface waters, rain gardens and Low Impact Development projects.
  2. **Action:** Promote the use of processed organics, such as compost and biochar, in stormwater filtration applications where appropriate.

**COMMENTS**

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**GOAL 6: Soil carbon sequestration using recycled organic materials will increase based on research recommendations. (System-wide)**

1. **Action**: Document carbon sequestration potential in agricultural soils through use of converted organic materials.

**COMMENTS**

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**GOAL 7: More diversified organics processing infrastructure will exist in the state. (End-of-Life)**

1. **Action:** Support scalable, localized systems for managing food and yard residuals, including small-scale anaerobic digesters and other suitable organic processing technologies.
2. **Action:** Support development and expansion ofcurrent organic processing technologies such as, but not limited to, anaerobic digestion and combined heat and power systems at industrial sites and wastewater treatment plants to possibly include the addition of food residuals for energy recovery. Work with Public Works Assistance Account and Clean Water State Revolving Fund Loans to increase opportunities.
3. **Action:** Support efforts to integrate multiple organic processing technologies such as anaerobic digesters, nutrient recovery systems, gasifiers, and other systems at composting sites.
4. **Action:** Evaluate barriers to broadening the use of anaerobic digesters for managing collected manure and food. Support more diversion of pre- and post-consumer organics to dairy anaerobic digester systems.
5. **Action:** Encourage the use of grant funds (Coordinated Prevention and Public Participation grants) for proven and viable diversified organics management technologies that generate beneficial end products.

**COMMENTS**

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**GOAL 8: Composting facilities will produce clean end products. (End-of-Life)**

1. **Action:** Work with collection service providers, composters, local governments and other stakeholders to research and promote better selection of feedstocks, including compostable food service products and better source separation at all points of collection.
2. **Action:** Promote producer and consumer actions and activities to increase the successful composting of food scraps while minimizing contamination in feedstock and outgoing compost.
3. **Action:** Identify ways the compost industry can adopt practices that provide significant improvements to composting operations**.**
4. **Action:** Support local government efforts to collect food and yard debris, free of unacceptable contaminants, at the curb.
5. **Action:** Support the ongoing efforts to better understand odor generated at commercial compost facilities, and the processing systems, tools, methods and mixtures that can eliminate major odors.

**COMMENTS**

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**GOAL 9: Diversified end-use markets will be in place for converted organic products. (Use, End-of-Life)**

1. **Action:** Support higher education research and development projects that enhance diversification of end-use markets for discarded organics.
2. **Action:** Support diversification of uses for woody debris from forest activities, including bioenergy and soil amendments.
3. **Action:** Establish more diverse end-use markets for construction/demolition wood waste by making new and enhancing existing connections (for example, connect biosolids composters and producers of woody by-products).
4. **Action:** Promote the use of compost produced in Washington.

**COMMENTS**

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**GOAL 10: The Biosolids regulatory program will have sufficient resources to ensure that biosolids are beneficially used.  (System-wide)**

1. **Action:** Promote and support efforts to increase understanding of land application of biosolids. Educate the public about the use of biosolids as a soil amendment.
2. **Action:** Facilitate the treatment, production, and the beneficial use of biosolids for more land application and less incineration and landfilling.
3. **Action**: Support research on a broader array of chemicals in finished biosolids, carbon sequestration potential and other independent peer-reviewed studies.
4. **Action:**  Utilize electronic database and geospatial system to help manage biosolids data.
5. **Action**: Support collection of nutrient data from soils after post biosolids applications.

**COMMENTS**

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**Reducing Impacts of Materials and Products**

**[Introduction](#TofC)**

Creating less toxic and less wasteful products and materials not only reduces waste and toxics but also limits harmful impacts to human health and the environment.

Toxic chemicals contained in consumer products and used in industrial processes are getting into the environment and people. These chemicals are released during use or at end-of-life, impacting the environment and human health.

Reducing toxic chemicals used in consumer products and industrial processes helps protect the health and safety of workers, households, and communities. Designing processes and products that use fewer toxics means less dangerous waste, lower economic costs, less need for government regulation, improved worker and consumer safety, and a cleaner environment. For these reasons, at the direction of the Washington State Legislature, the Department of Ecology is working with other state agencies such as the Departments of Health and Enterprise Services to develop a framework to reduce the most problematic chemicals and find safer alternatives when possible. In addition, agencies are also working to purchase safer products whenever feasible.

Reducing the amount of waste produced conserves valuable resources and saves money. Some members of the public are concerned about products and packaging seen as wasteful or non- recyclable. This creates frustration and the desire to make products less wasteful, more durable, or more recyclable.

**State’s Regulatory Structure: Laws and their Implementation**

The Washington State Legislature passed several laws restricting or requiring reporting of toxic chemicals in certain products, most of them in the last few years. Those laws focus on specific product types and chemicals known to be problems for human health and the environment. The [Children’s Safe Product Act](http://www.ecy.wa.gov/programs/swfa/cspa/) (CSPA) ([RCW 70.240](http://app.leg.wa.gov/rcw/default.aspx?cite=70.240)) requires manufacturers of children’s products sold in Washington to report if their product contains a [chemical of high concern to children](http://www.ecy.wa.gov/programs/swfa/cspa/chcc.html) and report why they have used that chemical in the product. The [Toxics in Packaging law](http://www.ecy.wa.gov/programs/hwtr/hazcom/toxpackage.html), ([RCW 70.95G](http://app.leg.wa.gov/rcw/default.aspx?cite=70.95G)) limits levels of lead, mercury, cadmium, and hexavalent chromium used in product packaging. The [Better Brakes law](http://www.ecy.wa.gov/programs/hwtr/betterbrakes.html) ([RCW 70.285](http://app.leg.wa.gov/rcw/default.aspx?cite=70.285)) restricts the use of several heavy metals and asbestos in automotive brake pads and shoes.

Other laws limit particular chemicals in certain products. [Bisphenol A (BPA)](http://www.ecy.wa.gov/programs/swfa/bpa.html) (RCW 70.280) is banned in bottles and cups for children, as well as sports bottles. [Polybrominated diphenyl ether (PBDE) flame retardants](http://www.ecy.wa.gov/programs/swfa/pbt/pbde.html) ([RCW 70.76](http://app.leg.wa.gov/rcw/default.aspx?cite=70.76)) are banned in a wide array of uses. A ban of copper in anti-fouling paints for recreational boats ([RCW 70.300](http://apps.leg.wa.gov/rcw/default.aspx?cite=70.300)) will take effect in 2018.

In addition, there are two product stewardship programs. [E-Cycle Washington](http://www.ecy.wa.gov/programs/swfa/eproductrecycle/index.html), the state’s electronics recycling program for computers and TVs, has been in operation since January 1, 2009 ([RCW 70.95N](http://apps.leg.wa.gov/rcw/default.aspx?cite=70.95N)). The mercury-containing lights product stewardship law was passed in 2010 and the program, [LightRecycle Washington](http://www.ecy.wa.gov/programs/swfa/mercurylights/), will begin on January 1, 2015 ([RCW 70.275](http://apps.leg.wa.gov/rcw/default.aspx?cite=70.275)). This program will help keep mercury, a highly toxic metal, out of the environment.

The solid waste statue ([RCW 70.95](http://apps.leg.wa.gov/rcw/default.aspx?cite=70.95N)) also mentions the importance of reducing and managing waste from products. The law references packaging and consumer products in the very first line of its intent. It also deals with particular products that were troublesome at the time of its writing (tires, vehicle batteries) and references the need for study of others (packaging, polystyrene, diapers). Concern for many of these products, and others, continues today.

Environmentally preferable purchasing (EPP) is the procurement of goods and services that cause less harm to humans and the environment than competing goods and services that serve the same purpose. Washington has a broad mandate for EPP activities that includes laws and executive orders that direct state agencies to purchase environmentally preferred products. [RCW 43.19A, Recycled Product Procurement](http://app.leg.wa.gov/rcw/default.aspx?cite=43.19A), has been in place since 1991. The state law on [procurement of goods and services](http://app.leg.wa.gov/rcw/default.aspx?cite=39.26&full=true) recently added that in determining the lowest responsive and responsible bidder, an agency may consider [best value criteria](http://www.ecy.wa.gov/programs/swfa/epp/laws_directives.html), including whether the bid considers human health and environmental impacts. In 2014, a section was added to this law that [prohibits polychlorinated biphenyls (PCBs) in goods the state purchases](http://lawfilesext.leg.wa.gov/biennium/2013-14/Pdf/Bills/Senate%20Passed%20Legislature/6086-S.PL.pdf). Purchasing laws have also long referenced the consideration of life-cycle costs. In addition to state directives, local governments and other political subdivisions frequently adopt EPP practices to help reduce their impact on Washington's environment and human health.

Ecology is responsible for ensuring compliance with many of the laws addressing products and toxic chemicals in products. Ecology routinely tests products to determine if manufacturers are complying with laws addressing chemicals of concern. Testing has focused on—and found—several classes of toxic chemicals: polychlorinated biphenyls (PCBs); toxic metals, including lead, mercury, cadmium, antimony, and cobalt; phthalates (used to make plastic softer); parabens (used as preservatives in personal care products and cosmetics); volatile organic chemicals, including formaldehyde; and flame retardants, including PBDEs and potential substitutes.

The presence of a chemical in a product does not necessarily mean it’s unsafe. However, some chemicals have been banned for specific uses because they are unsafe (BPA in baby bottles, and heavy metals, such as lead, in packaging). When Ecology finds a chemical in a product that is restricted or that a manufacturer has failed to report, the manufacturer is notified.

For the two state product stewardship programs, Ecology works closely with the product stewardship organizations selected by manufacturers to implement the collection and recycling programs. Bills are regularly introduced to the legislature to establish additional product stewardship programs, such as for paint and batteries.

There is increasing focus by consumer product companies on addressing sustainability or recyclability of packaging or other products. Ecology hopes to become more involved with these efforts. There is also increased focus on products deemed wasteful by some, such as plastic bags. Some local governments have taken actions, such as instituting plastic bag bans. Though none have passed in recent years, state legislators continue to introduce bills related to products seen as wasteful.

In some cases, Ecology works with other state, local, or federal agencies to implement laws and directives. Ecology will be working with other state agency purchasing programs to evaluate products and identify those with the fewest toxic chemicals. For example, new purchasing policies favor products without polychlorinated biphenyls (PCBs). Ecology also provides technical assistance to public and private entities to increase support for and availability of environmentally preferred products.

While product-related laws target just a few problems, implementation of these laws will make significant impacts in some areas. For example, when Washington’s Better Brake Law is fully implemented, it will prevent the release of approximately a quarter million pounds of copper in Washington State. Copper pollution in our water bodies negatively impacts fish and water quality.

Informed consumers make better choices, and so Ecology is working to provide information about toxics in consumer products and environmentally preferable purchasing. This includes sharing results of product testing programs with policy makers, product manufacturers, and consumers.

**Future Directions: What’s Next?**

Knowing when and how chemicals are used in products helps Ecology better understand where safer alternatives are needed. By sharing data from testing and reporting, Ecology is encouraging manufacturers to find safer alternatives to toxic chemicals for their products and processes. Successful progress in this area will take a unique partnership with the state and private businesses. The growing demand for products that do not contain toxic chemicals drives innovation in business and industry. This creates opportunity for Washington businesses to lead the nation in reducing toxics in products and compete in tomorrow’s marketplace.

The need to take action to address toxics in products will likely continue to receive state legislative attention, due to growing public concern about the topic and the lack of progress on federal reform of the Toxic Substances Control Act (TSCA). Some interest groups may propose legislation calling for specific restrictions on certain chemicals in products. There may also be more comprehensive legislation proposed promoting green chemistry and encouraging safer alternatives.

Since other states and countries are continuing to expand product stewardship programs, it is likely there will be more product stewardship legislation introduced in Washington State. Potential products include paint, batteries, carpet, and pharmaceuticals.

Interest in EPP is expanding, especially as a way to address toxics in products. It is likely there will be more legislation or executive orders requiring EPP. Public concern about packaging and non-recyclable or wasteful products will continue and solutions will be sought. One way to address this is ongoing dialogues with those making the products to encourage better design.

Reducing impacts of materials and toxics is an area receiving a lot of legislative attention. Consequently, this is an area that will most likely see many changes over the next five years.

**COMMENTS on REDUCING IMPACTS OF MATERIALS AND PRODUCTS INTRODUCTION**

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[**Reducing Impacts of Materials and Products Goals and Actions**](#TofC)

**GOAL 1: Ecology and others will work to increase knowledge about chemicals of concern. (Use)**

1. **Action:** Assess chemical hazards of a variety of chemicals, including those that impact vulnerable populations.
2. **Action**: Gather information about chemicals through environmental monitoring.
3. **Action:** Encourage the Legislature and the federal government to expand chemical disclosure requirements under the Emergency Planning and Community Right to Know Act (TIER II), Toxic Release Inventory, Toxic Substance Control Act, and other laws.

**COMMENTS**

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**GOAL 2: The acceptance and use of environmentally preferable products and services (EPP) within residential, commercial and institutional sectors will increase. (Design, Use)**

1. **Action:** Increase governmental agencies’ purchases of environmentally preferable productsand services (EPP) (toxic-free, least toxic products, recycled-content, durable, reused, and other environmentally responsible attributes), through cooperation with the Department of Enterprise Services, executive order, or law.
2. **Action**: Promote the use and benefits of environmentally responsible products and services for public and private sectors, coordinating education and outreach activities with partners.
3. **Action**: Support efforts to develop measurement and tracking systems for green purchases.
4. **Action:**Promote awareness of and increase purchases of products with independent third-party labels, certifications and disclosures, such as EPA’s Design for the Environment. Ensure labels are effective and credible.

**COMMENTS**

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**GOAL 3: Collection, reuse and recycling of toxic or hard-to-handle products will increase through additional product stewardship programs. (End-of-Life)**

1. **Action:** Strategically track and support extended producer responsibility (EPR) efforts and other producer help for toxic or hard-to-handle wastes as a means to increase collection and promote the highest and best use of materials. Work with stakeholders to advance extended producer responsibility programs that complement existing collection infrastructure, encourage living wages, and cover fair and reasonable costs.
2. **Action**: Working with stakeholders, explore ways to use EPR or other product stewardship programs to engage manufacturers to design and make products that are less toxic, less wasteful, and more reusable and recyclable.

**COMMENTS**

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**GOAL 4: Manufacturers will increasingly design products and packaging with recycled content and for durability, reuse, and recycling. Opportunities to address packaging-related issues with producers will be maximized. (Design, Use)**

* 1. **Action:** Research incentives and other options to increase use of and promote recycled content in products and packaging and to make products and packaging easier to reuse and recycle. Partner with trade associations and manufacturers to address design.
  2. **Action:** Monitor and participate in national efforts to improve symbols, messages and claims regarding the recycling or compostability of packaging.
  3. **Action:** Work with manufacturers and other groups focused on recycling challenges for product packaging and more sustainable packaging.

**COMMENTS**

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**GOAL 5: Manufacturers and other users of chemicals will significantly reduce the presence of persistent, bioaccumulative toxics** (**PBTs) and other toxics in consumer products. (Design)**

1. **Action**: Use technical assistance and other incentives to encourage businesses to conduct safer alternative assessments for priority chemicals. Pursue authority to require alternative assessments under certain circumstances. Recommend restrictions of chemical use when assessments show safer alternatives exist.
2. **Action:** Advance green chemistry and responsible use of nanotechnology by supporting the implementation of the Green Chemistry Roadmap. Establish the Green Chemistry Center as a permanent, fully-funded organization that successfully helps Northwest businesses use less toxic chemicals in their products and industrial processes.
3. **Action:** Support reform of the Toxic Substances Control Act (TSCA) and associated regulations.
4. **Action:** Develop Ecology staff skills to help manufacturers and other users of chemicals reduce unnecessary toxics in products and industrial processes, and influence design of more sustainable products and processes.
5. **Action:** Increase the recyclability of products and packaging by reducing the use of toxic components**.** Enforce toxics in products and packaging laws and regulations. Reduce toxic threats by reducing/eliminating the presence of toxic materials in recyclable and recycled products.

**COMMENTS**

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**GOAL 6: Non-point sources of toxic pollution will be reduced, improving and protecting water and air quality and preventing additional contaminated sites. (System-wide)**

1. **Action:**  Implement toxic reduction initiatives for chemicals of concern.
2. **Action**: Ensure that the agency’s toxic reduction strategy is adequately represented and given priority in the Puget Sound Action Agenda.
3. **Action:** PBTs and other chemicals of concern will be reduced through the Chemical Action Plan (CAP) process. Using the CAP process, we will select chemicals to address, write new CAPs, and implement CAP recommendations.
4. **Action:** Revise WAC 173-333 to update the list of chemicals in the regulation and to streamline the CAP process.
5. **Action:** Secure funding, such as the through the National Estuary Program (NEP), for toxic reduction activities in major water bodies, including Puget Sound and the Columbia River Basin; participate in the Columbia River Toxics Workgroup.

**COMMENTS**

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**Measuring Progress**

**[Introduction](#TofC)**

The saying goes, “What gets measured, gets managed.” At all levels of government, officials use data to evaluate the effectiveness of programs and initiatives. Data tracking and analysis also helps determine future directions and is useful when building budgets. Without careful data collection and analysis of costs and benefits, it is more likely that government-sponsored programs will be incorrectly established or eliminated. Performance measures are a natural outcome of data collection programs. It is important to develop thoughtful and effective performance measures along with our data collection programs, in order to better manage solid and hazardous waste systems.

When the Beyond Waste Plan was adopted in 2004, it included a measuring progress initiative. A critical component of this initiative was the development of the [Beyond Waste Progress Report](http://www.ecy.wa.gov/beyondwaste/bwprog_front.html), a series of indicators that show progress toward the plan’s vision to reduce waste and toxics. Since then, the Progress Report has been updated annually. While there has been some progress, it is clear there is much more to do. In addition, Ecology has been working to improve data tracking and analysis.

Most of the data that local government, private companies, and Ecology collect is legislatively mandated. This data largely forms the backbone for the Beyond Waste Progress Report. It is also used in other data efforts, such as the ["Solid Waste in Washington" Annual Status Report](http://www.ecy.wa.gov/programs/swfa/solidwastedata/report.html).

**State’s Regulatory Structure: Laws and their Implementation**

State law and rule requirements generally drive Ecology’s data collection and analysis. Regulations often require tracking to help gauge performance and show that changes are working as intended. Other data drivers exist, such as program performance goals and individual project needs. The following are the most comprehensive mandates for data collection and reporting related to hazardous and solid waste.

**Toxic Release Inventory**. ([Federal Emergency Planning and Community Right to Know Act](http://www.ecy.wa.gov/epcra/whatis.html)) Federal law requires this inventory but the state manages it. Businesses that legally store or release chemicals during normal operations are required to report to the state. Ecology collects this information on behalf of the Washington State Emergency Response Commission. The federal government has developed computer models that use this data to determine risks to communities and state as shown [here](http://www.ecy.wa.gov/beyondwaste/bwprogINDtri.html).

**Hazardous Waste Management** ([RCW 70.105](http://app.leg.wa.gov/rcw/default.aspx?cite=70.105)). Under the authority of this law, Ecology uses automated data systems to track amounts of dangerous waste generated each year and proper transport, treatment and disposal. We use this data to estimate [hazardous waste generation for the state](http://www.ecy.wa.gov/beyondwaste/bwprogHW.html).

**Waste Reduction** ([RCW 70.95C](http://app.leg.wa.gov/rcw/default.aspx?cite=70.95C)). This law requires pollution prevention (P2) plans for facilities that generate more than 2,640 pounds of dangerous waste per year or are required to report as part of the national Toxic Release Inventory. Ecology uses the data in the pollution prevention plans to assist facilities with reducing their use of hazardous materials. ([P2 assistance webpage](http://www.ecy.wa.gov/programs/hwtr/reducewaste.html))

**Solid Waste Management - Reduction and Recycling.** ([RCW 70.95](http://app.leg.wa.gov/rcw/default.aspx?cite=70.95)) Ecology is required to track and report the quantity of materials collected for recycling by local governments and private companies. The law also gives the state the authority to collect other solid waste collection and disposal data, including moderate waste risk data. These data are used to estimate [solid waste generation for the state](http://www.ecy.wa.gov/beyondwaste/bwprog_swGenRec.html), and to determine the [state’s annual recycling rate](http://www.ecy.wa.gov/programs/swfa/solidwastedata/report.html).

[**Children’s Safe Products Act**](http://www.ecy.wa.gov/programs/swfa/cspa/)([RCW 70.240](http://app.leg.wa.gov/rcw/default.aspx?cite=70.240)**)** This law requires manufacturers of children’s products sold in Washington State to report if their product contains a chemical of high concern to children. They also must explain why they use the chemical in their products.

[**Better Brakes Law**](http://www.ecy.wa.gov/programs/hwtr/betterbrakes.html) ([RCW 70. 285](http://app.leg.wa.gov/rcw/default.aspx?cite=70.285)). This law restricts the use of several heavy metals and asbestos in automotive brake pads and shoes. Manufacturers are required to report concentrations of copper, nickel, zinc, and antimony in brake friction materials currently sold in Washington.

**Future Directions: What Next?**

There is increasing pressure at all levels of government to show results. The legislature and the governor’s office are highly interested in the effectiveness of state programs. Performance measures are increasingly used to determine levels of funding, staffing, and changes in program activities.

Ecology’s partners are also interested in the data we collect and utilize it in their own organizations for a variety of purposes. Local governments want meaningful data to evaluate their programs. State data assists these efforts, especially with data from state waste composition studies. Private companies and non-profit organizations are also interested in a variety of information, such as the toxicity of wastes and products.

Technology is making data collection more efficient and data sharing easier. This trend will undoubtedly increase public access to government data so others have access to information and can perform their own analyses.

There is growing demand for more creative visual displays of data, for example, using infographics. There are also trends to use more data in public outreach on various social media, such as on Twitter, Facebook, blogs and websites. Infographics and the use of social media encourage more linking of different types of data for comparison purposes.

Over time, we expect to see more emphasis on data collection and analysis. Ecology and others, including local government, will have to think strategically about where to focus their data collection and analysis efforts since they can be expensive and resources are limited.

**COMMENTS on MEASURING PROGRESS INTRODUCTION**

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**[Measuring Progress Goals and Actions](#TofC)**

**GOAL 1: Ecology will use data to evaluate efficiency, effectiveness and environmental justice concerns of various Ecology activities. (System-wide)**

1. **Action**: Compare Washington’s data to other states’ data as a way to benchmark effectiveness. Publish the results.
2. **Action:**  Evaluate how to maximize the effectiveness of technical assistance and compliance efforts. Use the data in support of strategic outreach for education, compliance, and environmental benefit. Continue to use positive case studies to educate and recognize successful programs.
3. **Action:** Research data on distribution of services to underserved communities, such as those with limited English proficiency.
4. **Action:** Update and merge data and indicators from and for the *Beyond Waste Progress Report,* the Office of Financial Management, and other data sources so we can better present and compare data, and more efficiently evaluate program effectiveness.
5. **Action:** Establish an internal clearinghouse of hazardous waste and toxic reduction data to increase staff effectiveness with technical assistance and compliance efforts.
6. **Action**: Complete solid waste facility inspections to evaluate reporting compliance, material use and reuse, and other permit or rule requirements.
7. **Action:**  Connect data to staff work plans, stakeholder needs, and agency measures. Develop measures that track resource needs and stakeholder requests for assistance
8. **Action:** Increase the electronic posting of data via the State’s data.wa.gov website and similar public-access oriented resources. Market data through a variety of platforms, and publicize data more frequently. Develop more and innovative ways to strategically communicate and display data.

**COMMENTS**

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**GOAL 2: Ecology will research and share knowledge of chemicals of concern, and use this knowledge to direct work on reducing toxics. (System-wide)**

1. **Action:** Develop a report on toxics used in industrial processes or found in products used in Washington State. The report would provide a broad overview of current knowledge and gaps in knowledge about the use of chemicals of concern in Washington.
2. **Action:** Develop measures on how well the state is doing reducing toxics in products. Focus on products regulated under state law, such as Better Brakes, Children’s Safe Products Act and other applicable laws where Ecology is testing products to determine compliance.
3. **Action:** Add information about the toxicity of industrial processes and products in the Pollution Prevention (P2) Plan database (Turbo Plan). Such information would include a built-in chemical hazard assessment for various chemicals.
4. **Action:** Share more information about the status of facility and company practices regarding releases of pollution and reduction of toxics, using Ecology’s website and social media.
5. **Action:** Increase sharing of chemical hazard and product testing data between states and individuals by using open data sites.

**COMMENTS**

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**GOAL 3: Tracking measures will be in place for the flow of materials from manufacture and purchase through discard. (System-wide)**

1. **Action:** Complete a waste characterization study every four years, including potential sector analyses for C&D, MRW, organics, products and packaging. Coordinate state studies with waste characterization studies done at the local level.
2. **Action:**  Increase knowledge of trends in emerging wastes by using the waste composition study and the Consumer Environmental Index (CEI) model, and by working with partners to gather additional sales data and information. In addition, use the CEI to assess key impacts in the production, use, reuse, and end-of-life phases.
3. **Action:** Encourage manufacturers to complete self-evaluations on their own products and processes, such as lifecycle assessments and footprint projects.
4. **Action:**  Create an interactive map linked to the solid waste facilities database, showing recycling and disposal facilities, including C&D recycling and diversion facilities, reported materials and destination of materials.
5. **Action:** Research economic and environmental impacts of disposal, recycling, reuse, and waste reduction; including job creation, greenhouse gas emissions, toxic releases and groundwater and other water bodies. As part of this, work with WUTC and others to gather collection service cost data. Analyze data for opportunities to reduce waste and its impacts and increase recycling. Use data to prioritize focus on problem waste types or areas of opportunity such as C&D recycling and diversion.
6. **Action:** Measure and evaluate residuals and contamination and other system loss issues at recycling, compost, C&D diversion or other recovery facilities. Follow-up, evaluate, report and continue to research recycling destination data and other available information to determine the extent of material use statewide.

**COMMENTS**

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**Providing Outreach and Information**

**[Introduction](#TofC)**

Providing outreach and information to stakeholders on solid and hazardous waste management issues is critical to the success of this plan. We need outreach to keep stakeholders informed of rules, laws, trends, and research. We must also inform the public and encourage them to perform desired actions, such as recycling.

Based on input, outreach is wanted -- by the public, by those we regulate, and by those we provide technical assistance to. In this age of social media and digital communication, we have more ways to share information. Audiences are changing as demographics of our state change. Although funding is limited, the need and demand continues to grow for outreach and information.

**State’s Regulatory Structure: Laws and Their Implementation**

Many statutes acknowledge the importance of outreach for both solid and hazardous waste and materials.

[**RCW 70.95**](http://app.leg.wa.gov/rcw/default.aspx?cite=70.95) **- Solid waste management reduction and recycling** calls for education by both the state and local governments. Education is to be on “the need to reduce, source separate, and recycle solid waste” as well as to “promote the concepts of waste reduction and recycling.” It also establishes the 1-800-Recycle information line, a phone and on-line directory, to help guide people to recycling locations.

Similar intent is found in [**RCW 70.93**](http://app.leg.wa.gov/rcw/default.aspx?cite=70.93) **- the Waste Reduction, Recycling and Litter Control Act** (WRRLCA). In addition to increasing public awareness of the need for waste reduction and participation in recycling, this statute also calls for education on programs to control and remove litter.

In [**RCW 70.105**](http://app.leg.wa.gov/rcw/default.aspx?cite=70.105) **– Hazardous Waste Management**, local governments are required to have a plan for providing “ongoing public involvement and public education in regard to the management of moderate-risk waste.” Education is to cover risks from improper use and disposal, methods of proper handling and disposal, and ways to reduce waste.

[**RCW 70.105D**](http://app.leg.wa.gov/rcw/default.aspx?cite=70.105D) **– Hazardous waste cleanups – the Model Toxics Control Act** (MTCA) allocated grant funding for local governments to provide the outreach (and other programs) that is included in their plans. This statute also provided grant funds for non-governmental groups to deliver outreach and education.

The **Waste Reduction statute -** [**RCW 70.95C**](http://app.leg.wa.gov/rcw/default.aspx?cite=70.95C) called for an office of waste reduction to encourage reducing wastes and use of hazardous substances. It also established school awards for waste reduction and recycling.

The Department of Ecology (Ecology) has not had significant funds or staffing for agency sponsored education and outreach activities since the early 1990’s. The recession of 2008 led to further funding cuts for education and outreach. The litter campaign, our waste reduction newsletter, and the Toxic Free Tips program were all discontinued. Funding for the recycling hotline was cut in half. Resources to resume most of these activities have not been restored. During these times of reduced staffing levels, Ecology has relied on its many partners such as local government, businesses and non-governmental organizations to implement much of the needed outreach and education on waste-related programs.

In addition to the above statutes, the product stewardship laws for mercury-containing lights (RCW 70.275) and electronics (RCW 70.95N) include outreach requirements for producers and, to varying degrees, for Ecology. As part of product stewardship programs, producers must fund outreach.

Ecology is committed to providing equitable and meaningful access to programs, activities, and decisions for people with limited English proficiency. This is an important part of Ecology’s commitment to environmental justice and meeting federal obligations under Title VI of the Civil Rights Act of 1964 (Title VI).

An Environmental Justice Coordinator, Environmental Justice Committee, and four multilingual interpretation and translation teams support Ecology’s ongoing work to promote equity and non-discrimination under Title VI. Effort is increasing along with a growing demand for language access services. As the Spanish-speaking population grows, opportunities for outreach also grow, and we are now preparing materials for Spanish-language radio stations and magazines.

**Future Directions: What’s Next**

The complexity and variety of both solid and hazardous waste and materials are increasing; therefore communication needs will continue growing. Efforts to reduce waste and toxics and encourage reuse require clear and effective communication in order to promote changes in behaviors. Public concern about toxics is growing; more people want to know risks and alternatives to limit exposure to toxics in their environment and in products. Outreach work in this area will be needed. Growing opportunities and demand for digital outreach, including more webinars and social media, are areas we can take full advantage of.

Funding and staffing needs for education will need to increase in the next five years as we implement the recommendations in this plan. It will be necessary to find creative ways to address outreach needs, including partnerships with service providers and producers. Previously un-utilized or under-utilized outreach techniques, such as community-based social marketing, will become more important as we learn to apply them. This will be especially so for the growing population with limited English proficiency (LEP).

**COMMENTS on PROVIDING OUTREACH INTRODUCTION**

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[**Providing Outreach and Information Goals and Actions**](#TofC)

**GOAL 1: The majority of regulated businesses will understand how to comply with the Dangerous Waste Regulations, why it is important to implement their Pollution Prevention plans, and act accordingly. They will also understand that waste must be tackled during the design phase, not at the end-of-life phase, and when possible, will reduce waste before it is created. (System-wide)**

1. **Action:** Improve Ecology’s website through usability testing and include more industry-specific informationon the Dangerous Waste Rules, compliance, and implementing Pollution Prevention (P2) plans.
2. **Action:** Conduct Dangerous Waste workshops that include videos at Ecology’s regional offices.
3. **Action:** Develop a communication strategy to inspire businesses to address the social and economic benefits of environmental compliance, P2, and sustainable consumption. Such a strategy will take into consideration community based social marketing and will consider incentives to encourage behavior change.

**COMMENTS**

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**GOAL 2: Small businesses will understand how to safely handle hazardous substances and waste. (End-of-Life)**

1. **Action:** Working with others, identify gaps and develop a comprehensive small business outreach program for state and local jurisdiction’s Local Source Control program and other small business programs. Consider how to best work with vendors and others, including the Umbrella Green Business Program, to help distribute this information.
2. **Action:** Publicize chemical hazard assessment results in *Shoptalk* and other venues.
3. **Action:** Tailor small business outreach to other languages and cultures as needed.

**COMMENTS**

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**GOAL 3: The public and others will have reliable, culturally effective information regarding toxics in products, how to avoid them, and how to properly dispose of them. (Use)**

1. **Action:**  Increase the sharing of data, including product-testing data, with other agencies, states, and the public. Share results of product testing and case studies demonstrating successful replacement of toxic substances in products with safer alternatives.
2. **Action:**  Provide information on Ecology’s website about toxics in products, safer alternatives, and proper disposal. Options include updating Toxic-free Tips and partnering with the Department of Health.
3. **Action:** Encourage ingredient disclosure and labeling of consumer products to identify toxic ingredients.
4. **Action:** Seek grant funds and promote the use of grant funds to educate students, teachers (preschool through college), and the public on less toxic products and related topics.

**COMMENTS**

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**GOAL 4: Ecology will design culturally effective communication strategies and provide meaningful access across the state plan’s work. (System-wide)**

1. **Action**: Determine where and how Ecology can increase service equity or meaningful access to solid and hazardous waste services.
2. **Action:** Determine which communication strategies are most effective in reaching diverse audiences.
3. **Action:** Continue prioritizing vital documents for translation and referencing demographic resources (U.S. Census and State-based data) to better understand and provide underserved communities with equitable services and support.

**COMMENTS**

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**GOAL 5: Ecology and partner organizations will develop and distribute statewide positive, culturally effective educational messages on the benefits of composting and using compost. (Use, End-of life)**

* 1. **Action:** Create statewide educational messages for local governments and others to utilize. Determine effective means of distribution, which might include using Ecology’s website and Washington State University Extension offices.
  2. **Action:** Increase emphasis on backyard composting. Continue to support backyard composting programs, like Natural Yard Care, through grants. Promote composting information on Ecology’s website and local government websites. Work with local governments to develop a way to measure the impact of backyard composting on reducing organic materials going to landfills and demands on processing facilities.

**COMMENTS**

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**GOAL 6: Ecology and partner organizations will engage in educational efforts, including culturally effective messaging, that promote waste reduction, recycling, and safe disposal and complement local, regional, and national efforts. (System-wide)**

1. **Action:** Educate the public, students, businesses, and government on the benefits, practices, and economics of waste reduction and recycling. This includes the costs and benefits of recycling, and the connections between waste, resources, materials, and climate.
2. **Action:** Provide more communication, trainings, and technical assistance to local governments, waste and recycling businesses, and others on recycling, reuse, and reduction best practices, and other pertinent information. Increase use of case studies to educate about and recognize successful programs.
3. **Action:** Partner with WUTC to build upon solid waste collection companies’ opportunities to educate their customers through existing requirements.
4. **Action:** Partner with trade organizations, solid waste collection companies, local governments and other stakeholders to develop best management practices, messages and images for curbside recycling outreach that can be adapted state-wide to increase successful use of curbside recycling services.
5. **Action:** Develop and implement a communication strategy on overconsumption so the public understands that recycling (including for organics) is not enough to solve the problem of waste, including the connections between waste, resources, materials, and climate.
6. **Action:** Improve websites through usability testing and make better use of social and other media for key strategic messages.

**COMMENTS**

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**[Glossary](#TofC)**

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

**AD / Anaerobic Digestion**

The process of using bacteria to break down organic wastes in a low oxygen environment, resulting in a biogas rich in methane as well as liquid and solid residues.

**Alternatives Assessments**

A set of tools that manufacturers, product designers, businesses, governments, and other interested parties can use to make better, more informed decisions about the use of toxic chemicals in their products or processes.

**Bioenergy** **and Biofuels**

A renewable energy or fuel source made from biomass, including agricultural crops or residues, wood wastes and residues, animal wastes, and other waste materials.

**Biomass**

Recently living organisms or their metabolic by-products. Biomass is available on a renewable basis (as opposed to fossil fuels, which are derived from long-dead biological material). 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**

A semisolid product resulting from wastewater treatment processing of municipal sewage sludge that can be beneficially recycled and meets all requirements under Chapter 70.95J RCW.

**By-product Synergy**

The principle that one industry's waste can be another’s resource, and working together to match unwanted by-products as resources for new products and processes. This simple idea has great potential for reducing waste and toxics, as well as cutting operating costs.

**CEI /** [**Consumer Environmental Index**](http://www.ecy.wa.gov/beyondwaste/pdf/CEI_Background_4-23-12.pdf)

A measure of 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.

**CESQG /Conditionally Exempt Small Quantity Generator**

A facility that generates less than 220 pounds of dangerous waste per month. Washington State uses the term Small Quantity Generator (SQG).

**Consumption**

The use of a resource, product or material, typically following the production stage but prior to end of life.

**Corrective Action**

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

**CPG /Coordinated Prevention Grant**

Department of Ecology grants that help local governments develop and implement their hazardous and solid waste management plans. These grants are awarded once each biennium.

**Dangerous Waste**

Washington State law uses the term dangerous waste while federal law uses the term hazardous waste. Washington’s definition of dangerous waste includes some wastes that are not included in the federal definition (for example, solid corrosive dangerous waste, listed PCB waste).

**Dangerous Waste Regulations**

These regulate dangerous waste in Washington State under [WAC 173-303](http://www.ecy.wa.gov/programs/hwtr/reg_comp_guide/173-303.htm). They are based on the federal Resource Conservation and Recovery Act (RCRA). The Department of Ecology implements and enforces the dangerous waste regulations.

**Diversion**

Waste diverted from landfills, which includes materials reused and burned for energy in addition to those that are recycled.

[**E-Cycle Washington**](http://www.ecy.wa.gov/programs/swfa/eproductrecycle/index.html)

Washington’s producer-funded recycling program for computers, monitors, laptops, tablet computers, televisions, portable DVD players and e-readers.

**End-of-Life**

The point at which a product or material is no longer useful to the person possessing it and is discarded for disposal or recycling.

**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.

**EPA / Environmental Protection Agency**

The federal agency thatleads 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 purchasing or sustainable procurement, 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.

**Extended Producer Responsibility**

A mandatory type of product stewardship that includes, at a minimum, the requirement that the manufacturer's responsibility for its product extends to post-consumer management of that product and its packaging.

**Feedstock**

Materials needed to produce a product in a manufacturing or other process, including recycling, composting and other waste processing activities. Feedstocks can be virgin raw (new) materials or secondary (recovered or recycled) materials from the same or another process.

**Green Chemistry**

The invention, design, and application of chemical products and processes to reduce or to eliminate the use and generation of hazardous substances.

**Hazardous Waste**

A waste with properties that make it dangerous or potentially harmful to human health or the environment. Hazardous waste takes many physical forms and may be solid, semi-solid, liquid, or even contained gases. Washington State uses the term dangerous waste to include some wastes that are not in the federal definition of hazardous waste (for example, solid corrosive dangerous waste, listed PCB waste).

**Highest and Best Use**

The use of a material which maximizes energy and natural resource savings while minimizing environmental emissions, risk and damage to human health and the environment.

**HHW /** **Household Hazardous Waste**

Household products that contain corrosive, toxic, ignitable, or reactive ingredients. This includes any waste that exhibits the properties of dangerous waste, but is exempt from the Washington [*Dangerous Waste Regulations*](http://app.leg.wa.gov/WAC/default.aspx?cite=173-303-071)because it is generated by households.

**HWTR /** **Hazardous Waste & Toxics Reduction**

The Hazardous Waste & Toxics Reduction Program of the Washington State Department of Ecology.

**IPM** / **Integrated Pest Management**

Programs that 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 /** **Large Quantity Generator**

A facility that generates 2,200 pounds or more (or more than 2.2 pounds of certain types of wastes) of dangerous waste per month.

[**Lean and Green manufacturing**](http://www.ecy.wa.gov/programs/hwtr/lean/)  
A 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.

[**LightRecycle Washington**](http://www.ecy.wa.gov/programs/swfa/mercurylights/)

Washington’s producer-funded recycling program for mercury-containing lights, including fluorescent tubes, compact fluorescent lights, and high-intensity discharge lights.

**Life Cycle**

Consecutive and interlinked stages of a product or service system, from the extraction of resources to the final disposal.

**LCA / Life Cycle Assessment** **(or Analysis)**

A systematic process to assess the environmental aspects and potential environmental impacts associated with products, processes, or services, through production, usage, and disposal.

**Marine Debris**

Man-made waste that has been accidently or intentionally released into a storm drain, lake, ocean, or other waterway. Marine debris is often classified as land based or ocean based; estimates are that up to 80% of marine debris comes from land-based sources.

**Materials**

The substance or substances of which a thing is made or composed. The full range of materials that come from and return to the Earth such as wood, minerals, fuels, chemicals, agricultural plants and animals, soil, and rock.

**Materials Management**

A systemic approach to using and reusing materials more productively over their entire lifecycle. Materials management is focused on knowing and reducing the lifecycle impacts across the supply chain; using less material inputs (reduce, reuse, recycle); and using less toxic and more renewable materials.

**MRF / Material Recovery Facility**

A facility that collects, compacts, repackages, sorts or process for transports recyclable materials collected from curbside and other programs, for marketing to secondary processors, recyclers, or end-users.

**Meaningful Access**

The ability for all people to use services comparable to those enjoyed by members of the mainstream population. One key aspect to achieving this is eliminating communication barriers. Used in reference to environmental justice issues.

**MQG / Medium Quantity Generators**

A facility that generates between 220 pounds and 2,200 pounds of dangerous waste per month.

**MRW /** **Moderate-Risk Waste**

The combined hazardous waste stream made up of Small Quantity Generator (SQG) waste and Household Hazardous Waste (HHW). This term is unique to Washington State.

**Non-Point Source Pollution**

Pollution that occurs when rainfall, snowmelt, or irrigation picks up pollutants from air or land and deposits them into rivers, lakes, and coastal waters or introduces them into groundwater. These pollutants come from common, wide spread activities in [urban](http://www.sccdistrict.com/resubwt.htm) 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**

The use of processes or practices that reduce or eliminate the use of hazardous substances and the generation of wastes at the source.

**PBTs /** **Persistent Bioaccumulative Toxins**

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**

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 they build up in the environment and are known to cause cancer in animals. However, PCBs are still being produced as unintended byproducts in some instances.

**PPG /** **Public Participation Grant**

Department of Ecology grants that 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**

Something made or created by human or mechanical effort or by a natural process.

**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.

**RCRA /** **Resource Conservation and Recovery Act**

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.

**Regulated Generators**

Includes Large Quantity Generators (LQGs) and Medium Quantity Generators (MQGs) of dangerous waste.

**Sham Recycling**

The collection of materials under false or illegal claims for the perceived purpose of recycling where the materials are instead disposed or indefinitely stockpiled rather than legitimately recycled.

**SQG / Small Quantity Generator**

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*](http://apps.leg.wa.gov/WAC/default.aspx?cite=173-303)if certain conditions are met.

**Sustainable Materials Management (SMM)**

The use and reuse of materials in the most productive and sustainable way across their entire life cycle. SMM approach seeks to conserve resources, reduce waste, reduce toxic chemicals, slow climate change, minimize the environmental impacts of the materials we use throughout the material life cycle, and assure we have sufficient resources to meet today’s needs and those of the future.

**Sustainability**

Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

**Toxics**

A general term that refers to hazardous or toxic chemicals, substances, materials or wastes that have the properties to cause or contribute to illness, injury or even death of humans, animals, or other living things.

**TSCA / Toxic Substances Control Act**

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 / Treatment, Storage, or Disposal facility**

A facility that has authorization from the Department of Ecology to conduct hazardous waste management treatment, storage, or disposal activities.

**W2R / Waste 2 Resources**

The Waste 2 Resources Program, formerly the Solid Waste & Financial Assistance Program, of the Washington State Department of Ecology.

**Waste Conversion Technologies**

Includes pyrolysis, gasification, and hydrolysis, but not combustion. Some also consider the biologic process of anaerobic digestion a conversion technology.

**Waste Energy Recovery Technologies**

This includeswaste conversion technologies. **Energy recovery** from waste is the conversion of waste materials into useable heat, electricity, or fuel through a variety of processes, including combustion, as well as gasification, pyrolysis, and anaerobic digestion. This process is sometimes called waste-to-energy (WTE).

**Waste Management Hierarchy**

Priority methods for managing solid and hazardous waste established in Washington laws RCW 70.95 (solid waste) and RCW 70.105 (hazardous waste). While the hierarchy differs slightly between the two laws, both place reducing waste as the highest priority, followed by recycling, and safe disposal.

**COMMENTS on GLOSSARY**

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**Do you have any additional comments on the first draft of the state solid and hazardous waste plan update?**

**ADDITIONAL COMMENTS**

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**Thank you for your time and input.**

1. Sustainable Materials Management: The Road Ahead, U.S. Environmental Protection Agency, June 2009. [↑](#footnote-ref-1)
2. RCRA’s Critical Mission & the Path Forward, U.S. Environmental Protection Agency, June 2014 [↑](#footnote-ref-2)
3. Materials Management in Oregon: 2050 Vision and Framework for Action. Oregon Department of Environmental Quality, 2012. [↑](#footnote-ref-3)
4. Ensuring Safe, Clean Water for Healthy People and a Strong Economy: Updating Washington’s water quality standards to meet today’s toxic threats.”, Jay Inslee Policy Brief, July 2014 [↑](#footnote-ref-4)
5. Ibid [↑](#footnote-ref-5)
6. [1] Washington State Office of Financial Management. [Total Population by Race, age, sex and Hispanic Origin: 2010](http://www.ofm.wa.gov/pop/asr/default.asp). [↑](#footnote-ref-6)
7. [2] Migration Policy Institute (2011). National Center on Immigrant Integration Policy. [LEP Data Brief: Limited English Proficient Individuals in the United States: Number, Share, Growth, and Linguistic Diversity](http://www.migrationinformation.org/integration/LEPdatabrief.pdf). [↑](#footnote-ref-7)
8. Green chemistry means designing products and processes to reduce or eliminate hazardous substances. [↑](#footnote-ref-8)
9. “Goals” and “actions” replace the terms “*recommendations*” and “*milestones*” in the past two plans. [↑](#footnote-ref-9)
10. To connect the work in the plan to the materials management cycle, we have indicated in parenthesis which part of the cycle the goals relate to: Design, Use, End-of-Life Management or System-wide. [↑](#footnote-ref-10)
11. A “hub” is a regionally centralized processing center for recyclables; “spokes” are surrounding communities that feed recyclables they collect to the hub. [↑](#footnote-ref-11)
12. Landfills refers only those operating under WACs 173-304, 173-306, 173-350, and 173-351 [↑](#footnote-ref-12)