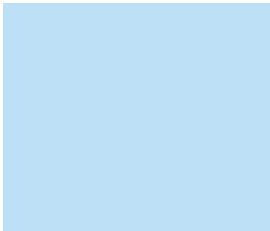
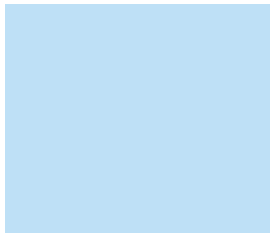
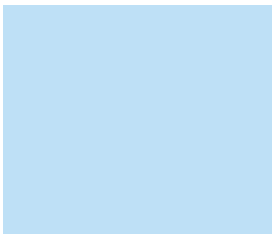


# Model Toxics Control Account



## Fiscal Year 2008 Annual Report



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

Thea Foss Waterway, Tacoma, before cleanup (below).



"Each person has a fundamental and inalienable right to a healthful environment, and each person has a responsibility to preserve and enhance that right. The beneficial stewardship of the land, air, and waters of the state is a solemn obligation of the present generation for the benefit of future generations."

**--Preamble to the Model Toxics Control Act**

Thea Foss Waterway, Tacoma, after (front cover, top right).

See story on page 11 and the Urban Waters Glossary, on page 21.

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## Washington State Department of Ecology's Mission

The Mission of the Department of Ecology is to protect, preserve, and enhance Washington's environment, and [to] promote the wise management of our air, land and water for the benefit of current and future generations.

### Purpose of this Report

This report reviews the past fiscal year's accomplishments by state agencies conducting programs and projects that relied upon funding from the Toxics Control Accounts. This report covers fiscal year 2008—the period from July 1, 2007 through June 30, 2008—and it describes:

- The amount and sources of revenue generated;
- Which state agencies received MTCA funds;
- Results of Toxic Control Accounts funding.

The Model Toxics Control Act divided the revenues into two accounts. One account helps fund projects of State-wide impact, and the other bolsters funding for Local projects of immediate impact. This fiscal year 2008 annual report likewise divides information into two primary parts: Part 1 describes state agencies' achievements, using funds from the State Toxics Control Account. Part 2 describes accomplishments that benefit communities, thanks to Local Toxics Control Account funding.



### The Lower Duwamish Waterway

flows through five and one-half miles of an industrial corridor of Seattle, into Elliott Bay. In 2001, the U.S. Environmental Protection Agency (EPA) added the Lower Duwamish Waterway to the National Priorities List (Superfund) of sites polluted with hazardous substances. The state Department of Ecology (Ecology) added the site to our Washington State Hazardous Sites List in 2002. The EPA and Ecology work together to clean up contaminated sediments—and to prevent recontamination—under the terms of an “Administrative Order on Consent” with the City of Seattle, King County, the Port of Seattle, and with the Boeing Company. Ecology's Toxics Cleanup Program (TCP) leads the combined efforts to clean known pollution pathways and to stop those pollutants from flowing into the waterway.





## Message from the Director

The Model Toxics Control Account report for Fiscal Year 2008 details how state and local governments used Toxics Control Account money to protect human health and the environment. A clean environment and a healthy business climate go hand in hand. When we invest in protecting and cleaning up Washington's environment, we help secure Washington's quality of life for families – and strengthen our competitive position in the global economy.

Most of the revenue to pay for this work came from the Hazardous Substance Tax on petroleum and other products. As oil prices rose to historic levels, we put the increased revenue to work to prevent new toxics from polluting our air, land and water, and to boost efforts to clean up contaminated sites around the state. We invested in cleaning up major state waterways such as the Thea Foss Waterway and Bellingham Bay, and in cleaning up orphaned or abandoned sites around the Puget Sound.

More than half of the Model Toxics Control Account money went directly to local governments as grants and loans to:

- Reduce health risks posed by diesel and woodstove emissions.
- Remove and replace contaminated soils on playgrounds and at daycare centers.
- Improve solid waste management and recycling services.
- Prevent stormwater from contaminating Puget Sound and other Washington waters.
- Clean up contaminated sites for redevelopment and productive land uses.
- Protect children from lead and other harmful materials found in children's toys and products.
- Create alternatives to burning yard waste and other debris.

This report describes the environmental work performed by state agencies during fiscal year 2008 to protect and promote a cleaner, healthier, greener Washington:

- The Department of Ecology managed hazardous waste, reduced toxics, and recycled wasted materials; prevented and responded to spills; and removed dangerous contaminants from the environment.
- The Department of Health's programs and activities were designed with the goal of preventing adverse effects to human health, by reducing exposures to toxic substances.
- The Department of Agriculture worked with farmers to reduce, and eventually eliminate, their use and storage of banned pesticides.
- The Washington State Patrol provided training to firefighters who must respond to, and eliminate, risks posed by hazardous-materials incidents.

Together with local governments, industries, and communities, we put the MODEL TOXICS CONTROL ACCOUNT to work promoting and maintaining a healthy environment and economy for ourselves and for our children.

Jay J. Manning, Director,  
Washington State Department of Ecology

## Basis of the Model Toxics Control Act

### The Model Toxics Control Act (MTCA) became Washington state law in 1989, following voter approval of Initiative 97.

The purpose of our state's cleanup law is to:

- Raise sufficient funds to clean up all hazardous waste sites.
- Prevent the creation of future hazardous waste sites that result from improper disposal of toxic substances.
- Promote the cleanup of contaminated properties and their subsequent beneficial reuse.

The law authorized the creation of two accounts:

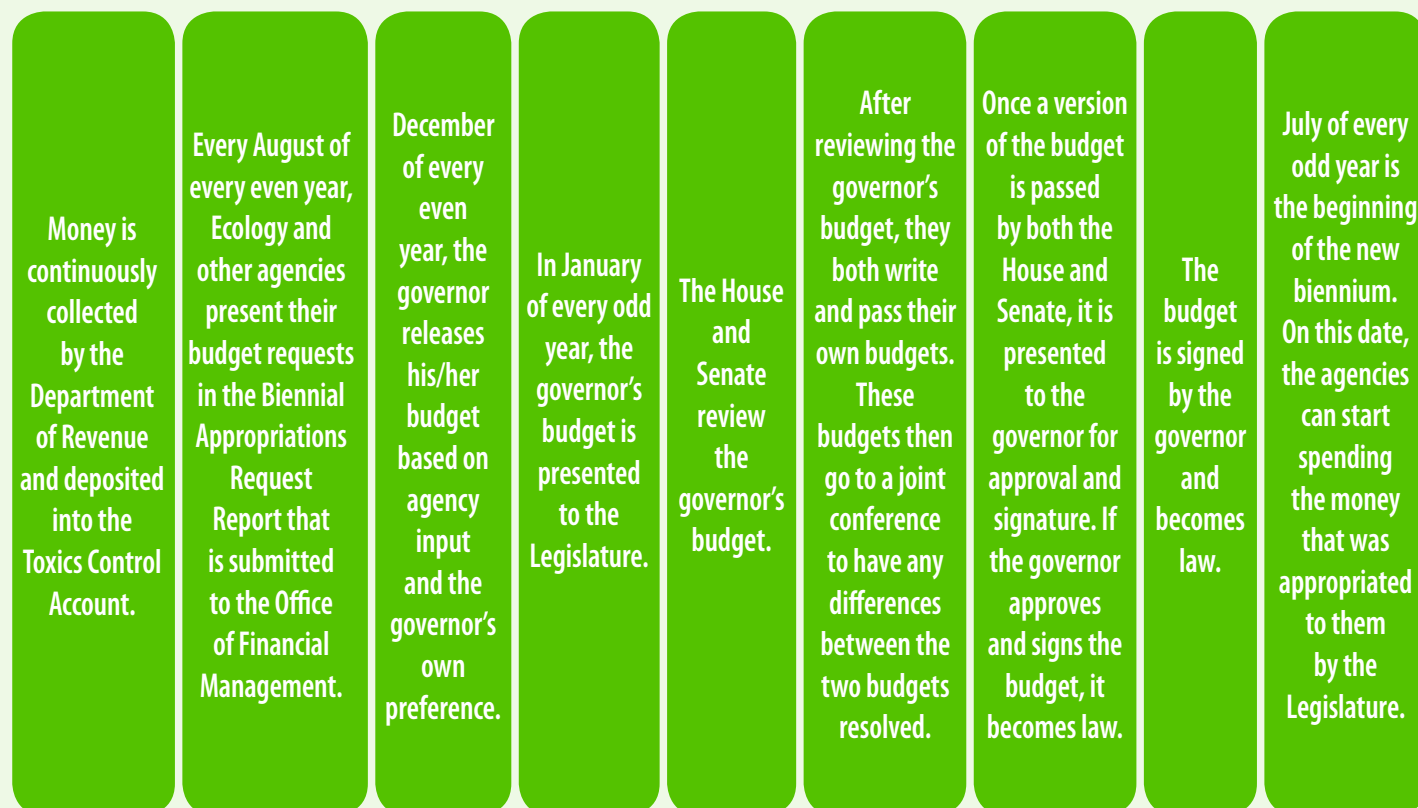
- (1) State Toxics Control Account; and
- (2) Local Toxics Control Account.

The primary source of revenue into the accounts is payments of a hazardous substance tax. This tax applies to the first in-state possession of petroleum products, pesticides, and certain other chemicals.

Whatever budget is provided to state agencies---- Ecology, Health, Agriculture, Revenue, University of Washington, State Parks and Recreation Commission, Department of Natural Resources, Puget Sound Partnership and Washington State Patrol----must be appropriated by the legislature through the biennial budget process.

Figure 1, below, shows the usual sequence for state agencies to obtain those appropriations.

**Figure 1: How state agencies obtain legislated appropriations from the Toxics Control Accounts**  
**Biennial Budget Process**



**In August of every even-numbered year, the budget process starts all over again.**

## Part 1 – STATE TOXICS CONTROL ACCOUNT

The State Toxics Control Account provides funds to state agencies whose missions include:

- Cleaning up contaminated sites.
- Improving hazardous waste management.
- Preventing future hazardous substance contamination.

In Fiscal Year 2008, the state's Departments of Ecology, Health, and Agriculture, of Revenue, State Parks and Recreation, and Natural Resources; the Puget Sound Partnership, the University of Washington, and the Washington State Patrol all received funds from the State Toxics Control Account.

In addition to revenue generated by the Hazardous Substance Tax, the State Toxics Control Account receives revenue through Ecology's actions:

- Cost Recovery for site cleanup: Ecology obtains reimbursement for its costs of providing oversight for and evaluation of the cleanup process performed on contaminated property, as defined by a decree or order.

- Cost Recovery for time spent evaluating Voluntary Cleanup documents: Ecology collects an hourly rate from persons who ask for Ecology's approval of a planned or completed cleanup action. Ecology studies the reports/records' compliance with MTCA standards, and issues either a "Further Action" or a "No Further Action" opinion.
- Fines and Penalties: Ecology levies fines or penalties on entities whose actions—or failures to act—damage or threaten environmental and human health protections.
- Mixed Waste Fees: Ecology collects fees from facilities that collect, handle, store or dispose "mixed" waste. (Defined as hazardous waste with a radioactive component—e.g., medical waste.)

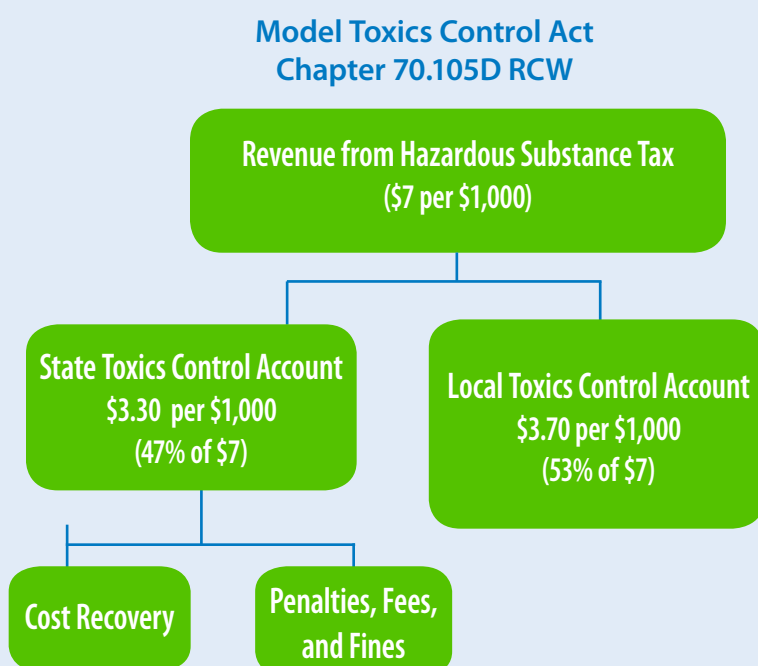
See Figure 2 for a Revenue Sources flow chart.

### Distribution of MCTA funds

defined by RCW 70.105D.070

- Ecology receives an allocation of 47.1 percent of the total tax receipts into the State Toxics Control Account to pay for hazardous waste sites cleanup and related planning and regulation activities.
- The amount of 51.9 percent of the total Hazardous Substance Tax revenues goes into the Local Toxics Control Account for disbursement by Ecology in the form of grants or loans, to bolster local municipal governments' hazardous waste control programs.
- And one percent of the total receipts from both Toxics Control Accounts fund Public Participation Grants to promote meaningful public involvement in hazardous waste cleanup projects and waste reduction campaigns.

**Figure 2: Revenue sources to the Toxics Control Accounts**



This report contains brief narratives of each agency's (or each Ecology program's) accomplishments in Fiscal Year 2008, using funds provided by the State Toxics Control Account. Revenue figures are listed in Table 1, below. The names of projects on which recipients spent the funds, are listed in Tables 2 and 3.

**Table 1: Revenue—Fiscal Year 2008 – State Toxics Control Account**

State Toxics Control Account	Revenue \$	Percent of Total
Hazardous Substance Tax	63,968,786	91 %
Mixed Waste Fees	162,711	0.2 %
Cost Recovery	5,774,578	8 %
Miscellaneous	5,581	0 %
Voluntary Cleanup Program Fees	562,890	0.8 %
Fines & Penalties	255,840	0.4 %
Treasurer's Transfers	(309,000)	<0.4 %>
Miscellaneous (Dept of Agriculture)	19,857	0.0 %
<b>Total Revenue</b>	<b>\$70,441,243</b>	<b>100 %</b>

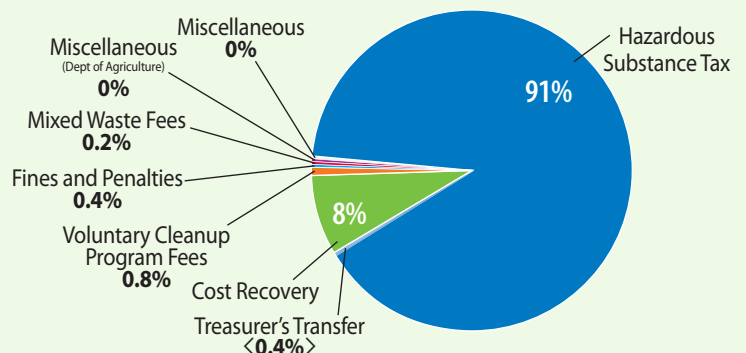
**Table 2: Ecology Expenditures—Fiscal Year 2008 State Toxics Control Account**

Department of Ecology	Expenditures	Percent of Total
Toxics Cleanup Program	14,771,515	27 %
Hazardous Waste & Toxics Reduction Program	6,451,692	12 %
Agency Administration, Facility, & Related Costs	5,288,824	9 %
Nuclear Waste Program	5,036,407	9 %
Solid Waste & Financial Assistance Program	3,040,856	6 %
Spill Prevention, Preparedness, & Response Program	3,595,653	7 %
Environmental Assessment Program	1,486,142	2 %
Water Quality Program	2,133,085	4 %
Shorelands and Environmental Assistance	87,103	0 %
Capital Program	13,002,723	24 %
<b>Total Ecology Expenditures</b>	<b>\$54,894,000</b>	<b>100 %</b>

**Table 3: Other State Agencies' Expenditures—Fiscal Year 2008 State Toxics Control Account**

Other State Agencies	Expenditures	Percent of Total
140 Department of Revenue	42,816	1.4 %
225 Washington State Patrol	209,963	4 %
303 Department of Health	1,384,552	29 %
360 University of Washington	41,893	1. %
465 Parks and Recreation	27,731	0.6 %
478 Puget Sound Partnership	194,300	4 %
490 Department of Natural Resources	1,001,624	21 %
495 Department of Agriculture	1,869,995	39 %
<b>Total Other Agencies' Expenditures</b>	<b>\$4,772,874</b>	<b>100 %</b>
<b>Total All Agency STCA Expenditures</b>	<b>\$59,666,874</b>	

**Figure 3: State Toxics Control Account Revenue—Fiscal Year 2008**



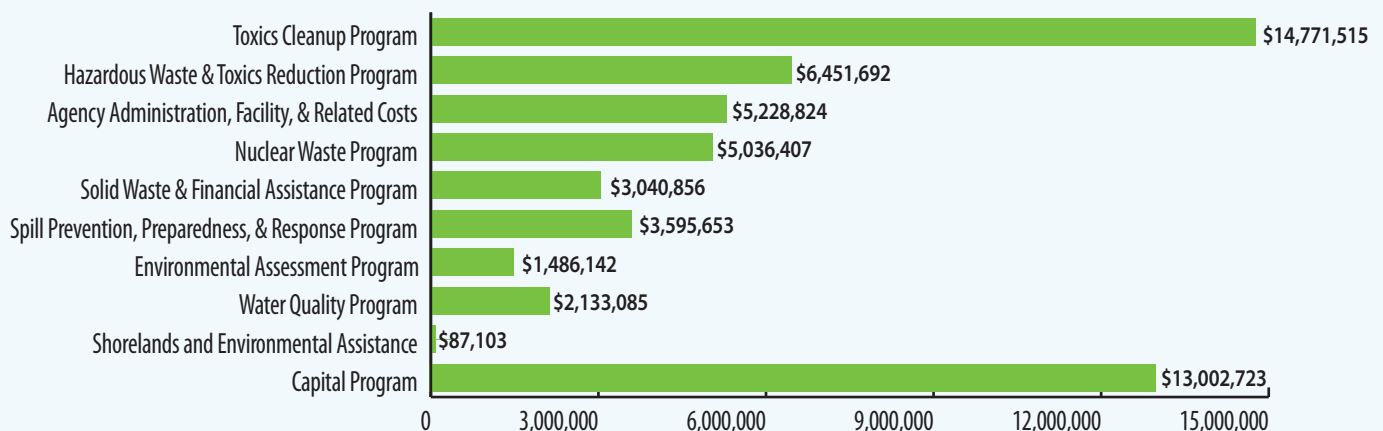


**Table 4: Top Cost Recovery Sites, Fiscal Year 2008  
(Listed in Alphabetical Order)**

Site Name	Paid	\$ Total
ALCOA-VANCOUVER POTLINER	Y	120,031.43
BEI WASHOUGAL	Y	67,490.05
>BELLINGHAM BAY PREPAY	R	295,755.24
BNR SKYKOMISH	Y	650,261.17
BOEING EVERETT	Y	141,561.79
CAMP BONNEVILLE	Y	384,114.88
CAP SANTE MARINE	Y	95,473.95
CASCADE POLE OLYMPIA	Y	81,284.94
CENTRAL WATERFRONT	Y	65,742.51
CUSTOM PLYWOOD MILL	N	70,040.10
EPHRATA LANDFILL	Y	96,843.31
*EVERETT SMELTER/SLAG	S	901,675.45
GE AVIATION	Y	102,360.85
HOLDEN MINE	N	112,827.14
ITT RAYONIER-PT ANGELES	Y	102,227.82
JELD WEN	Y	77,512.25
KING COUNTY DOT METRO TRANSIT LAKE UNION	N	67,291.12
LOWER DUWAMISH WATERWAY	Y	155,800.29
MOSES LAKE WELLFIELD	Y	63,544.19
OCCIDENTAL CHEMICAL	Y	103,408.12
PACIFIC POWDER	Y	116,285.63
PASCO SANITARY LANDFILL	Y	101,885.07
–POPE & TALBOT INC SAWMILL	U	103,158.84
SCOTT PAPER MILL-ANACORTES	Y	74,845.64
SMC/CADET SITE	Y	170,908.79
<b>Total</b>		<b>\$4,322,330.57</b>

**Symbol Key for Table 4**

- > Paid renegotiated sum; suspended process.
- \* Environmental claim settled after bankruptcy.
- Filed for bankruptcy protection; no assets.

**Figure 4: Ecology-State Toxics Control Account Expenditures-Fiscal Year 2008**

## Toxics Cleanup Program

### Program Mission

**The mission of the Toxics Cleanup Program is to remove and keep contaminants out of the environment.**

Toxics Cleanup Program (TCP) staff have identified nearly 11,000 toxics-contaminated sites since the mid-1980s. More than half of them resulted from damaged underground storage tanks leaking their contents into the surrounding soil and/or underground water supplies. During the past two+ decades, TCP staff addressed the hazards posed by those nearly 11,000 contaminated sites; now 58 percent require no further cleanup action, and more than 25 percent are currently engaged in the cleanup process.

Every TCP program member is involved in the cleanup of the state's contaminated sites in one way or another. Whether serving on the frontline of cleanup as a site manager, working behind the scenes planning and guiding program activities, or performing necessary core business functions. We all commit to carrying on the program's mission—removing contaminants from the environment—to protect human health and natural resources, create jobs, and otherwise contribute to the vitality of our state.

### Funding

The program receives funding from several sources, each dedicated to paying the costs of specified activities. In this report, we focus on the accomplishments and activities funded by the Toxics Control Account during Fiscal Year 2008.

Our Toxics Control Account funding usually comes to the program in the form of an "operating budget" legislative appropriation. Operating budget appropriations must be spent in the biennium they're allotted—the funds cannot be "carried over." This type of budget cannot guarantee that long-term cleanup projects will be funded to completion.

During Fiscal Year 2008, the TCP's operating budget used \$14,771,515 from the State Toxics Control Account. The funding mostly supported staff costs, with the remainder applied to the program's Clean Sites Initiative (CSI) duties. We used CSI money to clean up

contaminated sites where the responsible party (the land user, facility operator, or property owner) was either unwilling or unable to pay the costs. You will find further details about this effort in the CSI section.

During Fiscal Year 2008, the program used \$7,558,487 from TCP's STCA "capital budget." Capital funding supports the long-term financing of cleanup and restoration projects. In recent years, the program showed the value of securing longer-term funding for larger cleanup projects. Capital funding supported cleanup activities such as Remedial Action Grants (described in Part 2 -LTCA of this Fiscal Year 2008 Report), the Safe Soils investment, the Puget Sound Initiative, and the Skykomish cleanup. We describe capital budget accomplishments in the TCP's Capital Budget section, below.

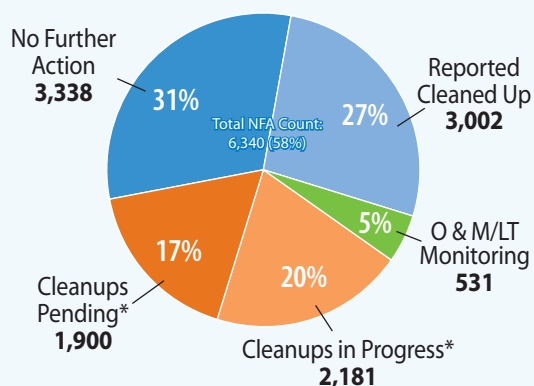
### Activities

The Toxics Cleanup Program's activities in Fiscal Year 2008 (July 1, 2007 through June 30, 2008) continued to protect public health and natural resources in two related areas: (1) cleaning up and limiting exposures to contaminated upland sites, and (2) mapping and removing contaminated sediments from the aquatic environment. We first focused our resources on addressing those contaminated sites that posed the greatest risk to public health and the environment. These include sites where contamination:

- Threatens drinking water supply delivery systems.
- Exists in a large quantity or spreads over a large area.
- Is very toxic.
- May affect the environmental health of water or sediments.
- May affect people who live, work, or recreate nearby.

Toxics may contaminate indoor air quality, or outdoor air-sheds; upland soil, fresh water or marine water sediments; groundwater (sub-surface reservoirs or flows), drinking water sources, and/or surface water.

**Figure 5: Known and suspected contaminated sites as of July 15, 2008. Total Sites: 10,952**



## Investigating—and if Necessary, Ranking Contaminated—Sites

### initial investigation

The first step in the cleanup process is to investigate a site. Once Ecology receives a complaint about a piece of property or the practices of an owner or operator, a Toxics Cleanup Program inspector will go to the site and conduct an initial investigation, looking at the site for signs of (1) possible spills and (2) the use and storage of hazardous waste. Some sampling may be involved.

### site hazard assessment

If the initial investigation determines the need for further work at a site, an Ecology expert may conduct a site hazard assessment.

A site hazard assessment records basic environmental characteristics about a site—sometimes including land use history. TCP staff apply the Washington Ranking Method to those characteristics and land use history to estimate the potential threat to human health and the environment if the contamination is addressed. A score of one represents the highest level of concern, relative to other sites on the list, and a score of five represents the lowest.

By ranking sites according to our Washington Ranking Method, the Toxics Cleanup Program expends limited State Toxics Control Account funds on sites given a priority ranking. During Fiscal Year 2008, we completed 129 site hazard assessments:

- Of those assessments, 98 new sites were added to the Hazardous Sites List.
- Thirty (30) sites received a “No Further Action” determination within the year.

- Based on our site hazard assessments, we referred the owners of six (6) sites to the Voluntary Cleanup Program.

## Hazardous Sites List

The Hazardous Sites List includes all sites that have been assessed and ranked, using the state’s Washington Ranking Method. Sites are ranked on a scale of one to five, with one representing the highest level of concern and five the lowest. When ranking a site, we consider the primary exposure routes (air, soil, surface water, and [under] ground water) that could pose a risk to public and environmental health. Every six months, Ecology updates and publishes the Hazardous Sites List, posted on-line at [http://www.ecy.wa.gov/programs/tcp/mtca\\_gen/hazsites.html](http://www.ecy.wa.gov/programs/tcp/mtca_gen/hazsites.html).

At twenty-one (21) of our “priority” sites, the cleanup action fulfilled the substantive requirements of our cleanup law. We therefore removed those completed sites from the Hazardous Sites List during Fiscal Year 2008. See Table 5 for the list.

## High-Priority Contaminated Sites Cleanup

Each site is unique. Similar contaminants may pose different types and levels of risk to public health and the environment, at different sites. Ecology’s cleanup efforts focus first on high-priority sites. Identified Superfund sites and sites Ecology ranked 1 or 2 under Washington’s hazard ranking system, are defined as “high-priority” because of:

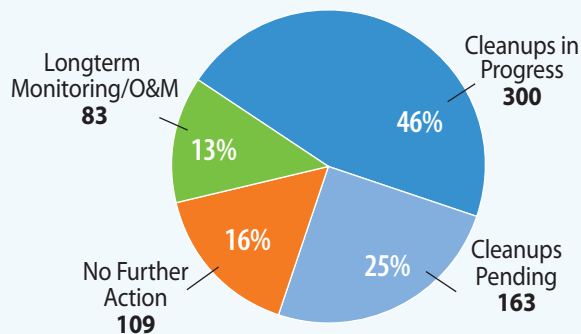
- Amount of contamination.
- Types of contaminants.
- How easily the contamination could come into contact with people and our environment.

Public concern and a need for immediate response may also affect which sites get top-priority attention from the Program.

We currently list 671 high-priority sites in the state of Washington. See Figure 7 (below) for the status of cleanup activity at the high-priority sites.

We removed six (6) high-priority (ranked 1 or 2) sites from the State’s Hazardous Sites List during Fiscal Year 2008 (FY 08). See Table 5, for the high-priority sites that were removed from the ranked list.

**Figure 6: Status of Superfund & State Ranked 1 or 2 Sites (as of July 15, 2008)**



## Prevention

Ecology currently regulates more than 10,000 active storage tanks in or on properties used as gas stations, industries, commercial properties and government entities. Our permitting process ensures that storage tanks are installed, managed, and monitored as required by federal standards (in a manner that prevents releases to the environment). Properly managing underground storage tanks saves millions of dollars in cleanup costs, and prevents the contamination of limited drinking water and other finite resources.

## Cleaning up Lower-Priority Contaminated Sites

We experienced another increase in requests for assistance during the past fiscal year. The Toxics Cleanup Program directly managed or gave technical assistance to cleanup projects at 875 contaminated sites ranked 3, 4, or 5. The distribution of cleanup progress at those sites is:

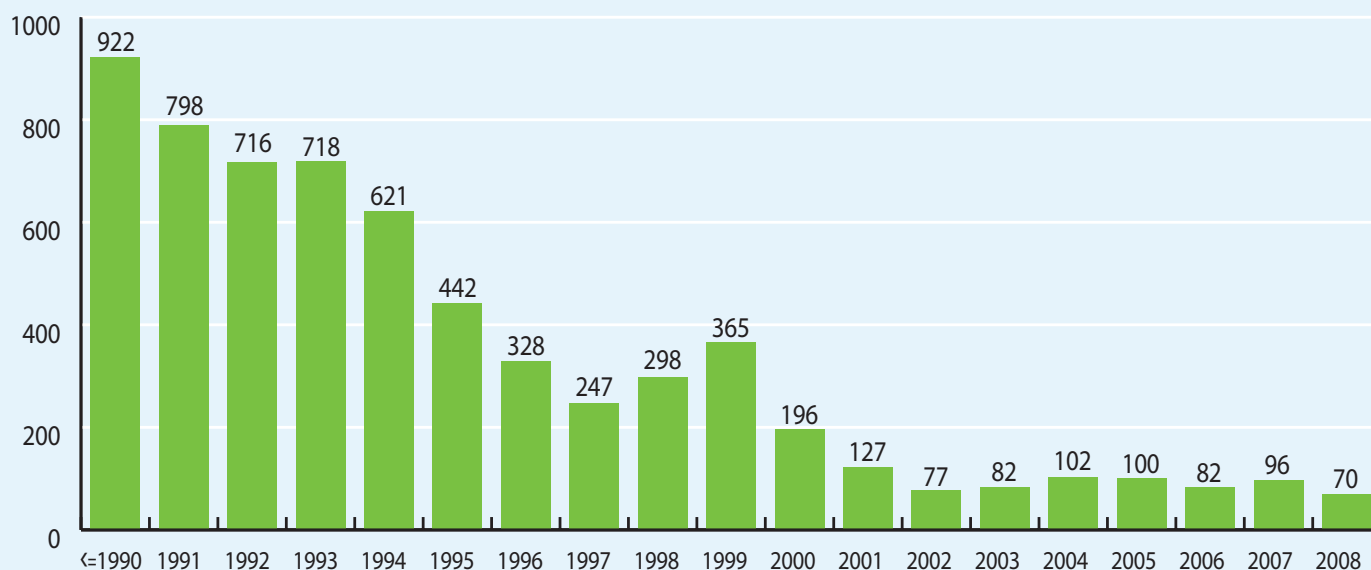
- 140 of these sites are currently undergoing cleanup.
- 28 of these sites are in a long-term monitoring phase.
- 110 sites received a “No Further Action” determination from Ecology.
- 572 sites were pending (ranked and waiting to begin) formal cleanup action.
- 10 sites await the owners’ choice between formal and voluntary cleanup.

In Fiscal Year 2008, we also completed cleanup actions at 15 lower-priority sites and removed them from the Hazardous Sites List.

## Voluntary Cleanup Program

The Voluntary Cleanup Program (VCP) best addresses routine or less complex contamination cleanups where both the sources of contamination and reasonable and available cleanup technologies are easily identified. The majority of voluntary cleanup projects involved petroleum contamination from leaking underground storage tanks.

**Figure 7: Number of underground storage tank releases (As of July 15, 2008)**





A person may enter the Voluntary Cleanup Program by submitting a completed VCP application and signing a VCP Agreement promising to pay an hourly rate for expert consultation with cleanup staff. In exchange, VCP staff agree to review and evaluate the customer's cleanup plans or reports, and render an opinion stating whether the documents will/do comply with the requirements and standards of the Model Toxics Control Act—Washington's cleanup statute. Upon the customer's request, staff will review the customers' documents and render a written Opinion, such as "Further Action Needed" or "No Further Action." Since October 1997, property owners or business operators have entered 3,438 sites into the Voluntary Cleanup Program:

- 2,364 VCP sites received a No Further Action determination.
- 1 VCP site continues long-term monitoring.
- 1,059 VCP sites under review, await Ecology's final Determination.
- 5 VCP sites were pending cleanup commencement on July 15, 2008.

Participants in the Voluntary Cleanup Program provide high value to human health and the environment. Without their efforts a large number of "low-priority" hazardous sites might never achieve cleanup. Our VCP participants save time and money by controlling their sites' cleanup contractors and schedules; and VCP participants can transfer use or ownership of

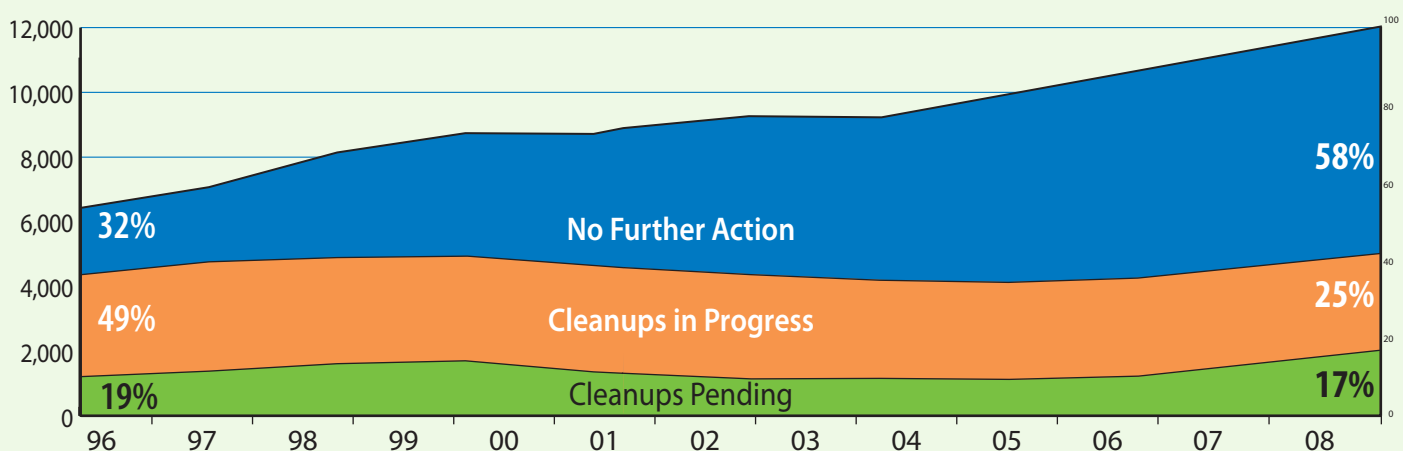
the site, without fear of future liability for the initial contamination. The community around the VCP site benefits by (1) lowered risk of human exposures to contamination, (2) lowered risk of fiscal liability for the municipality, and (3) collecting higher tax revenues when the sites return to productive use.

## Uniform Environmental Covenants Act

The Uniform Environmental Covenants Act (UECA) took effect on July 22, 2007. This new state law established an "environmental covenant"—a legal device which restricts activities on sites where some contamination remains in place. While the general goal of most cleanups is to return a site to a condition where it can be safely used for *any* purpose, this is not always technically possible or economically practicable. Land use restrictions and institutional controls help minimize exposure risks on properties where partial cleanups are the best we can achieve at a site.

These restrictions limit "use" to *safe* uses, by alerting potential purchasers or tenants to the potential for inadvertent exposures to residual contamination. Any person using land on which such restrictions are necessary becomes liable for damages to human health and the environment that result. Rather than "taking" the site out of production, the restrictions allow economic development to occur.

**Figure 8: Cleanup trends of known and suspected contaminated sites. (As of July 15, 2008)**



TCP staff identified the number of sites in our state controlled, in part, by restrictive covenants. By May 2008, we appointed a "UECA Coordinator" to conduct reviews for our program and learn the sites' status with regard to periodic review. We also developed a UECA Registry, listing all sites in the state with environmental covenants, and we published the list on the website.

The most significant workload impact of UECA has been reducing the backlog of overdue periodic reviews. Our new UECA Coordinator completed 26 reviews (a total of 110 reviews by TCP staff to date) since the law took effect in July 2007. Currently, approximately 450 properties in the state have environmental covenants attached to their deeds. The Toxics Cleanup Program set an ambitious goal of completing 50 reviews within every 6 months measure through June 2009. Any remaining reviews must be completed by June 2010. Our achievement of the goal may be delayed due to the hiring freeze imposed on state agencies.

## Brownfields

Brownfields are properties that are abandoned or underused because of real or perceived contamination from past industrial or commercial practices. The Toxics Cleanup Program invests public dollars to redevelop brownfield sites primarily to clean up environmental problems. In the process, these cleanups also:

- Create jobs.
- Leverage investments.
- Revitalize neighborhoods.
- Create new local revenue sources.

## Leveraging investment

Every dollar of public investment in brownfields leverages \$8 in total investments, according to national studies. Brownfields-related investments in site assessment, cleanup, and site preparation, leverage total investments at a ratio of \$1 to \$20.

*See the front cover photo, top right.*

**Table 5: Sites considered cleaned up and removed from the Hazardous Sites List during Fiscal Year 2008**

Site Name	City	County	VCP*	Priority
1147 Dock Street	Tacoma	Pierce	N	0**
Benton City Maintenance Yard	Benton City	Benton	N	3
Brewster Elementary School	Brewster	Okanogan	N	3
Burlington Northern RR - East Olympia	Olympia	Thurston	Y	5
Burlington Northern Sante Fe RR	Marcus	Stevens	Y	5
Chapman Property	Port Orchard	Kitsap	Y	2
Four Corner Auto Wrecking	Maple Valley	King	N	2
Grant County PUD Diesel Generating	Moses lake	Grant	Y	5
J Marcel Building	Tacoma	Pierce	Y	5
Joseph Simon & Sons Kent	Kent	King	Y	1
Lewis & Clark Elementary School	Wenatchee	Chelan	N	4
Lincoln Elementary School	Wenatchee	Chelan	N	3
Manson Elementary School	Manson	Chelan	N	4
Moses Lake City Maintenance Facility	Moses lake	Grant	N	2
Naches Valley Intermediate School	Naches	Yakima	N	5
Reid S Automotive Inc	Lakewood	Pierce	Y	2
Sheraton Spokane Hotel Property	Spokane	Spokane	Y	5
Verax Chemical Co	Snohomish	Snohomish	Y	3
Washington Elementary School	Wenatchee	Chelan	N	3
West Side High School	Wenatchee	Chelan	N	5
Yakima Speedway	Yakima	Yakima	Y	5

\*Voluntary Cleanup Program, \*\* Site cleanup supervised by the U.S. Environmental Protection Agency.

## Cleanup Enhancement And Revitalization Team (CLEAR, formerly “Brownfields”)

Policy Unit staff have formed a working group called the CLEAR Team. The mission of the Cleanup Enhancement And Revitalization Team is to support the fulfillment of state law RCW 70.105D.010(4), by integrating land use planning with our cleanup policy. The group's efforts promote the Agency's goals of supporting sustainable communities and natural resources, as well as preventing future pollution. Cleanup integrated with community vision and comprehensive site planning allows the reuse of previously developed land, thereby relieving pressure on “unbuilt” land.

Projects that clearly integrate remedial actions with the larger community vision of restoration, recreation, or economic benefit often solve multiple problems, leverage multiple funding sources, and keep stakeholder focus on the end goal. This is best accomplished when planning and coordination with the community take place before cleanup actions begin.

The CLEAR group's work during the next two years will develop planning tools and outreach materials to aid local communities in learning the concepts of Integrative Project Planning and applying its four principles: developing vision, understanding risk, respecting time, and leveraging money.

## Cover Story

### Thea Foss Waterway in Tacoma

When featured in the Fiscal Year 2005 MTCA report, the Thea Foss Waterway in Tacoma was still under redevelopment, but many sites were near completion. Three years later, in May 2008, the Thea Foss Waterway project received the prestigious Phoenix Awards from the U.S Environmental Protection Agency, 2008 Brownfields Conference in Detroit, in recognition for excellence in brownfield redevelopment.

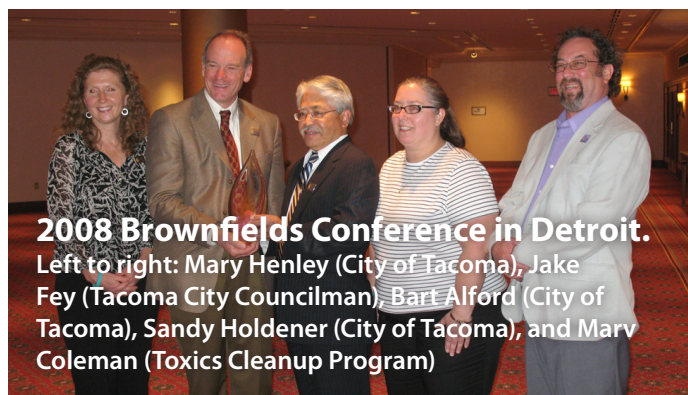
### Collaboration improves outcomes

The Commencement Bay Superfund environmental cleanup involved more than 100 local, state and federal agencies, private business and property owners, Native American tribes, and environmental groups. For the Thea Foss cleanup part of that larger effort, Community members were instrumental in the planning and design. The cleanup made way for waterfront access, view corridors and mixed-use design along with habitat construction, restoration, and enhancement. With collaboration, creativity and a focus on concrete results, it is now a model for contemporary urban redevelopment.

### Revitalizing Tacoma's urban core

Employment projections for the Thea Foss Waterway redevelopment project exceed 450 new jobs. The project has spurred \$400 million in private investment to date and about another \$400 million anticipated in the near future. However, most importantly, Tacoma's shoreline, which always has been an important asset to the community, is now cleaned up and accessible for the public to use and enjoy. Three additional sites are currently slated for commercial development as well as two public open space projects on both sides of the waterway near the head.

Learn more at [www.theafoss.com](http://www.theafoss.com).



**2008 Brownfields Conference in Detroit.**  
Left to right: Mary Henley (City of Tacoma), Jake Fey (Tacoma City Councilman), Bart Alford (City of Tacoma), Sandy Holdener (City of Tacoma), and Marv Coleman (Toxics Cleanup Program)



## Department of Correction Penitentiary Site.

Ecology partnered with the Department of Corrections to conduct a Remedial Investigation and Feasibility Study (RI/FS) at the Penitentiary in Walla Walla in March 2008. A Remedial Investigation gathers historical information and sampling data to determine where and how much contamination may be present in soil and groundwater. A Feasibility Study evaluates possible cleanup methods and technologies, and weighs the alternatives in preparation for a cleanup action.

The Penitentiary is situated on 540 acres in a primarily rural area. The facility began operating in 1887 and today houses 2,164 offenders. Chemicals called volatile organic compounds (VOCs) have been identified in groundwater upgradient of the Sudbury Road landfill outside the prison perimeter fences. The City of Walla Walla has not found these chemicals in the drinking water that supplies the community and the prison.

Some chemicals historically used to perform a variety of services at the penitentiary may have been disposed in a landfill outside of the penitentiary perimeter fences. The chemicals were necessary to: refinish and repair furniture, dry-clean clothing, maintain motor pool vehicles, manufacture license

plates and traffic signs, perform metal working and welding, process photo film, and equip medical and dental labs.

One dynamic challenge of cleanup at this site is the prison setting itself. Decisions for cleanup must accommodate the physical barriers of a prison; safety for prisoners, staff, and the community; environmental justice issues for prisoners who cannot leave their place of housing and may not speak English; and a host of other technical questions to address contamination.

Ecology conducted individual interviews with prison staff, inmates, and community members to assess the best methods for communicating cleanup information. Additionally, separate meetings were held to explain the proposed RI/FS to prisoners, staff, and the community. We used translators so affected individuals for whom English is a second language [and culture] could receive the information in Spanish, Russian, Vietnamese, and Chinese.

The project is moving forward and we expect to publish a draft Remedial Investigation report in the near future. The report will be available to the public for comment.



Department of Corrections Penitentiary Site in Walla Walla





Marcelle McGraw's Childcare, After

## Toxics Cleanup Program – Capital Budget Projects

The Washington State Capital Budget provides funding for activities such as public works projects and building structures. Capital Budget projects must be completed within the two-year Capital Projects funding cycle.

In the Toxics Cleanup Program, capital budget funds paid for large-scale public works projects, including cleanups on state-owned aquatic lands and uplands within a half-mile of Puget Sound, and cleanup actions where lead and arsenic contaminated schools and playgrounds. These projects included:

- Safe Soils Initiative (cleanups at schools and playgrounds).
- Cleanup Toxic Sites - Puget Sound/Upland/ Aquatics Toxics Cleanup.
- Skykomish Cleanup

These projects are described in more detail below.

**Table 6: Safe Soil Actions in 2008**

Name	City	Amount
Betty Koval	Tacoma	15,776
Anna Arthur	Tacoma	12,512
Arcadia Montessori	Tacoma	20,128
Betty Casos	Tacoma	7,800
Betty Williams	University Pla.	16,824
Carol Campanoli	Tacoma	4,352
Cherrydale Elementary	Steilacoom	50,199
Christine Rigell	Fircrest	3,808
Dona Hamilton	Tacoma	11,551
Eileen Eddleman	Lakewood	9,574
Growing Pains	Tacoma	11,968
Heather Larson	Tacoma	11,045
Judith Murphy	Steilacoom	12,512
Kathy Bouchee	University Pla.	7,732
Katrina Smith	Tacoma	11,968
Lee Elementary	East Wenatchee	16,700
Little Tree Montessori	Vashon Island	6,510
Marcelle McGraw	Lakewood	14,090
Mary Brazeau	University Pla.	17,952
Nancy Shepardson	Tacoma	8,051
Nancy Snyder	Tacoma	5,440
Nautilus Elementary	Federal Way	23,969
Orchard Middle School	Wenatchee	171,945
Our Inspiration II	Tacoma	34,432
Peshastin-Dryden Elem.	Peshastin	117,800
Seabury School	Tacoma	6,193
St Charles Borromeo	Tacoma	22,166
Steel Lake Preschool	Federal Way	5,990
Sunnyslope Elementary	Wenatchee	207,536
Teresa Payne	Tacoma	6,202
Twin Lakes Elementary	Federal Way	64,618
Viktoria Swanson	Tacoma	5,066
Yvonne Medina	Lakewood	17,952
<b>Grand Total</b>		<b>\$960,360</b>

## Safer soils, healthier kids!

Central Washington is home to production of a variety of food crops, including pears, grapes, apples, and hops. Unfortunately, some of the pesticides used to protect the crops left a lasting effect on these orchard properties. One of these, lead arsenate, was applied on crops through 1950 to control the codling moth. Today, this pesticide is the cause of lead and arsenic contamination on old orchard lands throughout central Washington.

The chemical structure of lead and arsenic, causes them to bond with soil particles; they often remain at or near ground surface level for decades, posing long-term risks that playing children will inhale or ingest them.

Ecology's Central Region office, located in Yakima, spent the past three summers (2006, 2007, and 2008) cleaning up contaminated soil from school yards. To date, over \$5 million were spent to clean up 14 schools in Okanogan, Chelan, Douglas, and Yakima counties

Depending on size of the school yard, the range of contamination, and the soil type, Ecology chose from a variety of soil remediation techniques. They range from full-scale excavation, where the contaminated soil is removed/disposed and replaced; to capping, where a permeable, protective barrier caps the existing contaminated soil and separates it from a new clean soil cover. Ecology also used a deep-mixing technology, where clean topsoil was mixed with contaminated soil underneath. Sometimes, a combination of technologies is used.

An important aspect of these cleanups is the limited time frame. Work can not begin until school is out for the summer, and work must be completed before school begins in the fall. In addition, there must be established grass that is mature enough to be used by the children when school starts. Because seeded grass can take up to 3 months to be ready for use under the best of conditions. For this reason, up to one-acre of sod was placed at each school. The sod is typically ready for use within 3 weeks. Unfortunately, the play areas at each school are limited to this area of sod until the seeded areas mature.

Completion of these projects relied upon patience and cooperation from staff at the schools involved. While schools had to plan around cleanups and the delays that can sometimes result, when the cleanup were complete, they typically had improved school irrigation systems, turf, and playgrounds.

*See other Safe Soil Actions photos on the Front Cover—upper left, and lower right.*



**Elementary students enjoy their new playfield, Sunnyslope Elementary, Wenatchee, WA**





## Safe Soils Remediation and Awareness

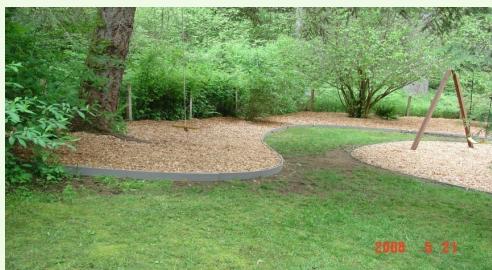
In 2001, an area-wide soil contamination Task Force was formed to address special problems posed by the discovery of wide-spread, low-level, lead and arsenic contamination. The contamination represented decades of emissions from commercial enterprises—such as metals smelters—and from agricultural pesticide applications. In 2005, the Area-wide Soil Contamination law (Chapter 70.140 RCW) directed the Department of Ecology to implement the findings from the Task Force.

The immediate concern was exposure of children. Children exposed to lead and arsenic contaminants face a greater risk of adverse health effects than do adults, because of their smaller size and faster metabolisms.

The Task Force recommended that government conduct soil sampling, followed closely by soil cleanups or other remedial actions to minimize children's exposures. The members recommended that Ecology focus sampling efforts at school playgrounds, in parks, or around daycare centers—wherever groups of children can access or are exposed to dirt and soil. The Task Force advised Ecology staff to focus in areas of Pierce, King, Snohomish, Yakima, Chelan, Okanogan, Stevens, and Spokane Counties—where historical zoning and land uses showed industrial and agricultural production.



**Little Tree Montessori, before**



**Little Tree Montessori, after**

## This Child Care Site is Soil Smart!

At Marcelle McGraw's childcare facility in Lakewood, high levels of lead contaminated the play areas. This play area became a construction action priority.

Tacoma-Pierce County Health Department and Ecology started safety outreach within days of receiving soil sampling results.

Marcelle and Scott McGraw enrolled the childcare site in the program; within a week they started a "shoes off" policy in their childcare center that applied to both children and parents.

Within days, Ecology published the State Environmental Policy Act Checklist document for public notice/comment, and started discussing the soil safety action plan with a contractor. The childcare center's action plan included removing the top six inches of soil, unrolling geotextile fabric over the smoothed lower surface, and covering the fabric in play chips.

With the help of the childcare center owners and the current contractor, Ecology completed construction activities just 36 days after receiving the sampling results. The soil safety actions cost \$14,089.60. The childcare facility owners/operators appreciated the smooth process, and the children gladly claimed the new play area! See photo, page 13.

In 2000, prior to creation of the Soil Safety Program, Ecology sampled schools and childcare facilities on Vashon Island, and found high levels of arsenic contamination. At the time of the Vashon-Maury Island study, Ecology could only offer educational materials and ideas about ways to help minimize exposures to the contaminated soil. News of contamination caused bad publicity for a few schools on Vashon Island. After the start up of the Soil Safety Program, island school administrators and childcare providers shied away from the new, free program. After three successful projects on Vashon Island, however, a private school that had been reluctant to meet with Ecology decided to learn about the program. Little Tree Montessori expressed concerns about digging (removing topsoil from) the entire yard—new sod requires more water, and soil removal can create dust and disturb established plants. Ecology worked with the operators to devise a plan that retained their hand washing and shoes off policy, while also removing some soil contamination and covering the soil beneath playground equipment. The soil safety actions at Little Tree Montessori cost \$6,510. See before and after pictures.

## Clean Sites Initiative (CSI)

In Fiscal Year 2008, we continued to distribute Ecology's cleanup funding among several public works projects at high priority sites. TCP expended about \$2.2 million under the Clean Sites Initiative from the State Toxics Control Account to clean up contaminated sites where the parties liable for cleanup were either unwilling or unable to pay the costs of removing contamination. We contracted with environmental consulting firms to continue or start remediation actions at more than half a dozen high priority sites. The cleanup of contaminated sites, using funds from the State Toxics Control Account, Ecology reduced or eliminated human and environmental exposures to those contaminants—one of Ecology's top management priorities.

## Puget Sound Initiative (PSI) Cleanup Sites

For nearly two decades, the Toxics Cleanup Program identified and addressed contaminated sites in the Puget Sound area. As petroleum prices rose, greater tax revenues flowing into the MTCA accounts allowed us to expand our efforts toward cleanup, restoration, and protection of the bays within the Sound.

Through the Puget Sound Initiative, we focused additional efforts on those sites within one-half mile of Puget Sound. Staff reviewed these sites and prioritized them for additional cleanup actions, based on their proximity to the Sound and on the threat they posed

to human health and the environment. Collaboration among local, tribal, state, and federal governments, along with business and environmental interests, has been key to leveraging our funding.

The highest priority Puget Sound bays we selected are:

- Fidalgo/Padilla Bays
- Budd Inlet
- Port Gardner/Snohomish River Estuary
- Oakland Bay, Shelton
- Port Angeles Bay-wide
- Port Gamble/Kitsap Peninsula and Bremerton
- Dumas Bay

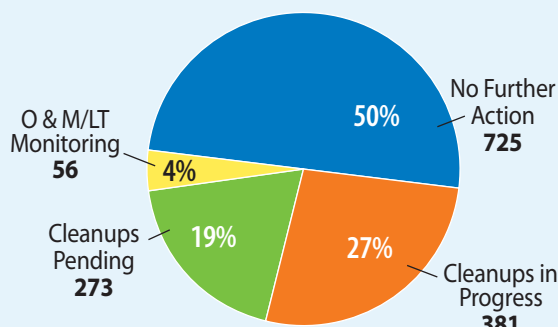
Our early actions in these bays will:

- Protect and restore valuable shellfish and marine resources.
- Improve critical habitat.
- Protect human health.
- Stimulate the community's economy.
- Improve the image of the individual bays.
- And increase the number of local jobs.

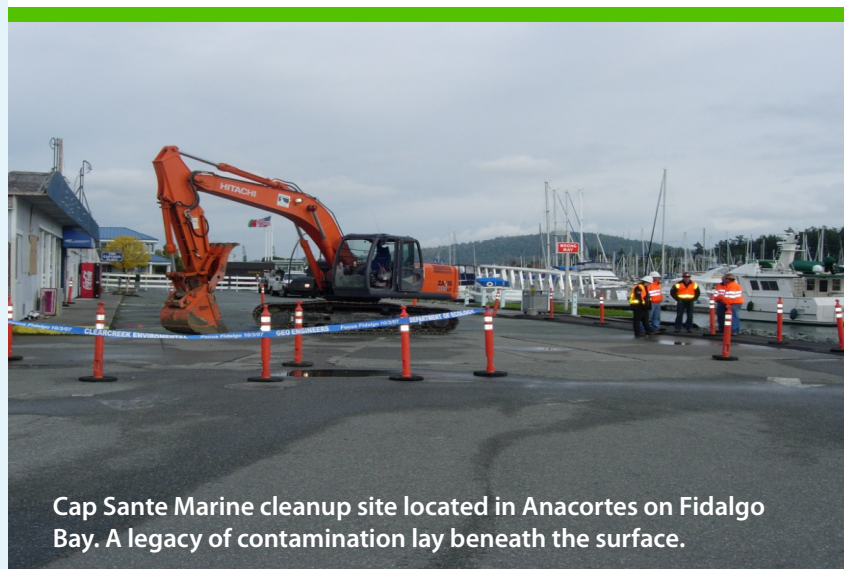
Toxics Cleanup Program staff designed a "bay-wide" or geographic approach to the cleanup of these sites. This approach allows faster cleanups than the traditional site-by-site method did. This bay-wide method results in larger areas of cleaned up and restored shoreline—and restored habitat for fish, wildlife, and people. Activities from one of the priority bay-wide projects (Fidalgo Bay/Padilla Bay), and from the Port Angeles Sediments Investigation, gained benefits:

**Figure 9: PSI\* known and suspected contaminated sites (As of July 15, 2008)**

**Total number of Sites identified: 1,435**



\*PSI= Sites in the water or within ½ mile of Puget Sound



Cap Sante Marine cleanup site located in Anacortes on Fidalgo Bay. A legacy of contamination lay beneath the surface.



## Fidalgo Bay and Padilla Bay

Fidalgo and Padilla Bays are among the seven priority bays identified for early cleanup and restoration actions under the Puget Sound Initiative.

### environmental threats

The contaminants of concern found at these sites include dioxins, petroleum hydrocarbons, and polychlorinated biphenyls (PCBs); metals (including mercury), sulfides, and ammonia; phthalates, and polycyclic aromatic hydrocarbons—contaminants toxic to both human and aquatic life. Mercury, PCBs and dioxins can be toxic to fish and shellfish, but they can also build up in fish tissue—posing a risk to humans who eat them. We also found wood waste, which is harmful to the aquatic habitat. When wood waste builds up in the aquatic environment, it can harm productive near-shore habitat that sustains life such as shellfish, forage fish, and salmonids.

### focused response

Ecology completed a comprehensive bay-wide sediment investigation. We worked with the Samish Indian Nation to complete a Remedial Investigation and Feasibility Study for replacing the rock causeway that bisects and impacts Fidalgo Bay. We also negotiated with the Port of Anacortes to remove the “Enchantress”, a derelict vessel. Increased efforts for this area also include:

- Signing new Agreed Orders and negotiating one Consent Decree.
- Completing or beginning three new Remedial Investigations.
- Beginning the Remedial Investigation and Feasibility Study process at other sites.
- A dredge cleanup of contaminated sediments at the Dakota Creek Industries site.

### sediment investigation

Ecology’s extensive sediment investigation of Fidalgo Bay helped us by:

Informing cleanup priorities.

Finding any new areas needing cleanup.

Discovering the sources and extent of contamination throughout the bay.

Conducting a human health consultation with the Department of Health to determine whether we needed to set any new fish advisories.

## Port Angeles Harbor Sediments

Port Angeles Harbor is one of seven Puget Sound priority targets of the Puget Sound Initiative. Past sediment sampling showed levels of several toxic chemicals, including dioxins, exceed state allowed concentrations. We are investigating the sediment pollution and will develop a strategy for cleaning up the harbor where warranted.

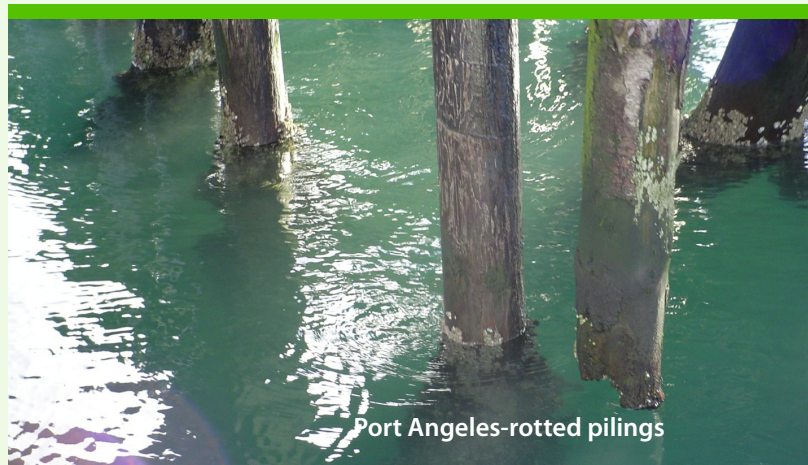
### harbor pollutants

Many types of pollutants in Port Angeles Harbor may pose a threat to human health and the environment. These pollutants also threaten fisheries and shellfish beds, and the people who depend on them. Some sources of those pollutants include wastewater, industrial-based contaminants, and stormwater runoff. Wood debris and pilings, coated with toxic treatments such as creosote, leach out from the wood into the water. Decomposing wood removes oxygen from the benthic (bottom-dwelling) marine environment, and produces ammonia and sulfides, which harm plants and animals and can also be toxic to aquatic organisms.

### focused response

Ecology began the harbor-wide study in late May 2008. We will take sediment samples from locations throughout the harbor, for laboratory analysis. These analyses will take several months. We will post periodic updates on the Ecology Web site at [http://www.ecy.wa.gov/programs/tcp/sites/portAngelesHarborSed/paSed\\_hp.htm](http://www.ecy.wa.gov/programs/tcp/sites/portAngelesHarborSed/paSed_hp.htm).

The release date for public review of the draft of the report has not been set, but it’s targeted for Fall of 2009. This report will describe study results, which will help Ecology identify areas for cleanup in Port Angeles Harbor.



## Bellingham Bay Demonstration Pilot



Bellingham Bay

### Bellingham Bay is home to an innovative approach to toxics cleanup and waterfront redevelopment.

Under the Bellingham Bay Demonstration Pilot Initiative, Ecology and the Port of Bellingham co-manage a multi-agency collaborative effort. This pilot integrates sediment cleanup, pollution source controls, habitat restoration, and waterfront redevelopment. This collaboration will transform polluted industrial areas into a mix of residential, recreational, commercial, and industrial uses.

Twelve contaminated sites along Bellingham's waterfront are named in this integrated bay-wide approach, spelled out in the 2000 Bellingham Bay Comprehensive Strategy developed by Pilot partners. See Table 7 for specific site names and cleanup progress. Pilot partners\* are developing a program model for Puget Sound Initiative communities such as

Anacortes and Port Angeles. **This pilot could position Bellingham as the national model for waterfront revitalization.**

The large-scale cleanup and habitat restoration work performed in Bellingham Bay over the next six to seven years, will comprise significant progress toward achieving the Governor's goal of restoring Puget Sound by 2020.

Pilot Partners estimate the total cleanup cost for all sites at \$120 million: Ecology expects to contribute about \$60 million. We'll contribute funding from the Local Toxics Control Account, in the form of remedial action grants.

Since December 2001, Ecology's Toxics Cleanup Program has spent about \$5 million on Bellingham Bay cleanup sites. Pilot Partners expect to spend approximately \$25 million on the Pilot Initiative during the 2009-11 biennium.

Bellingham Bay Demonstration Pilot partners:

- Washington Department of Ecology (Co-manager)
- Port of Bellingham (Co-manager)
- City of Bellingham
- Whatcom County
- Washington Department of Fish and Wildlife
- Washington Department of Natural Resources
- Washington State Department of Transportation
- Puget Sound Partnership
- Lummi Nation
- Nooksack Tribe
- NOAA
- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

**Table 7: Bellingham Bay sites and cleanup progress**

Site name	Initial Site Assessment	Draft Agreed Order	Draft RI/FS	Draft Consent Decree	Project Design and Permit	Construct	Long-Term Monitoring
Central Waterfront	X	X	O	2009	2010	2010	2012
Cornwall Avenue Landfill	X	X	O	2009	2010	2010	2012
Georgia Pacific Chlor-Alkali/Mill	X	2009	2010	2011	2011	2012	2013
Boulevard Park	X	2009	2011	2012	2012	2013	2014
R. G. Haley	X	X	O	2010	2010	2011	2013
Harris Avenue Shipyard	X	X	2010	2010	2011	2012	2013
Holly St Landfill	X	X	X	X	X	X	O
I&J Waterway	X	X	O	2010	2011	2012	N/A
Little Squalicum Park	X	X	O	2009	2010	2011	2011
Marine Services NW	X	2011	2012	2012	2013	2014	2015
Weldcraft Steel & Marine	X	X	O	2009	2009	2010	2010
Whatcom Waterway	X	X	X	X	O	2010	2014

X = Completed O = In progress

## Skykomish Cleanup

### background

The Burlington Northern & Santa Fe (BNSF) Railway Company operated a railway maintenance and fueling facility in Skykomish from the early 20th Century until 1974. Over the decades, bunker-C and diesel fuel oil were discharged to the environment on the rail yard. The oil flowed downward to the water table, and under the town, to the South Fork of the Skykomish River.

For a number of years, the Toxics Cleanup Program, and BNSF Railway Company worked with the Town of Skykomish to determine the most effective approach for cleaning up the contamination. In June 2006, work began to excavate portions of the existing levee and nearby upland areas--the first step in implementing cleanup.

During the summer of 2007, Ecology drafted the cleanup plan and consent decree with BNSF and made it available for public review and comment. The documents outline the proposed cleanup plan and restoration process for the town. We estimate the cleanup and restoration processes will cost more than \$50 million and take four years to complete. The planned cleanup actions started in 2008 and will continue through 2011.

The consent decree includes BNSF's \$5.5 million payment to the state for damages to natural resources and for services lost as a result of the oil contamination. For the 2007-2009 Biennium, the Legislature appropriated from the State Toxics Control Account to the Toxics Cleanup Program, the sum of \$7,000,000 to be spent solely for the Skykomish Cleanup efforts.

### current cleanup activities

2008 cleanup work started in May with contractors mobilizing and setting up in Skykomish. Major cleanup activities conducted for the 2008 summer included:

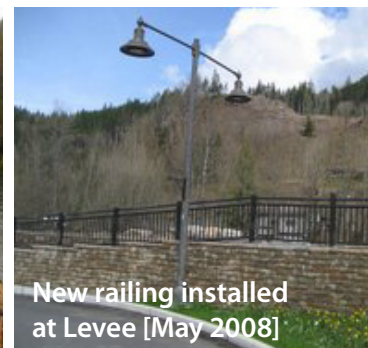
- Temporarily relocating the McEvoy House and Whistling Post Tavern to allow excavation on those properties.
- Installing a hydraulic control and containment (HCC) system – a groundwater barrier and groundwater interception trench – along the boundary between the rail yard and Railroad Avenue.

- Relocating the BNSF Depot building to install the HCC system.
- Excavating/removing contaminated soil/ groundwater and product from the vicinity of Railroad Avenue.
- Restoration of properties.
- Installation of the community wastewater system.

Cleanup alternatives for the Skykomish School are also being tested to determine which is best for that work, scheduled for 2010.



Levee planting  
[10/24/07]



New railing installed  
at Levee [May 2008]

*“The scope and complexity of this cleanup - with contamination spread under much of the town - exceeds any other in Washington,” said Tim Nord, from Ecology’s Toxics Cleanup Program. “These proposals open the final chapter of an unwanted environmental legacy this community has endured for decades.”*

*“It’s wonderful, after so many years of preparation, to see the horizon and beyond,” said Skykomish Mayor Charlotte Mackner. “We appreciate Ecology and BNSF for their spirit and support. The cleanup is an indispensable part of achieving our exciting goals for a vibrant second century.”*

*“The town and the railroad have worked hard with us over many years to reach this point, and we’re very pleased to propose this comprehensive package” added Nord. “While much work remains for all of us, we are confident that through this agreement and our partnerships, Skykomish can well harness its unique character and natural surroundings for a bright future.”*



## Hazardous Waste and Toxics Reduction Program

**The Hazardous Waste and Toxics Reduction (HWTR) Program's long-term vision sees transition to a society where waste is viewed as inefficient and where most wastes and toxic substances have been eliminated. HWTR set its goals to achieve this vision—foster sustainability, prevent pollution, and ensure safe waste management.**

HWTR staff engage in three main types of activities – (1) prevention of toxic threats, (2) hazardous waste management, and (3) cleanup.

- **Prevention** – Only by preventing pollution can we break the cycle of costly cleanups. HWTR staff evaluate business entities' pollution prevention plans and we provide technical assistance to businesses, offering specific ways to reduce the use of hazardous substances in their products or services.
- **Waste Management** – Managing hazardous waste appropriately helps protect people and the environment. HWTR staff provide compliance guidance and technical assistance to businesses that generate hazardous wastes. Where necessary, we pursue enforcement to reduce risks or impacts to human health and the environment. HWTR staff also write for and enforce permits at facilities that treat, store, or dispose of –their own or other businesses'—hazardous wastes.
- **Cleanup** – HWTR staff issue and enforce permits for specific types of facilities that treat, store or dispose of hazardous waste. Those permits may include rules for conducting cleanups at sites contaminated over many decades of industrial use. Ecology recovers most cleanup costs from the property owners or business users.

The State Toxics Control Account funds several activities designed to accomplish our program's prevention, waste management, and cleanup responsibilities.

### Technical Assistance to Businesses—

Prevention is the key to breaking the ongoing cycle of contamination clean-ups. Facilities that produce more waste are more likely to mismanage it. Mismanagement of wastes can result in contamination that threatens human and environmental health, and therefore eventually requires clean-up.

1. **Operations review site visits.** During 251 performance-focused site visits in FY08, our staff provided business-specific advice for reducing hazardous material use, avoiding waste generation, and managing hazardous waste appropriately. We focused on improving the operations and maintenance in industries that have the highest rates of waste generation and non-compliance. We showed the businesses how to achieve energy savings, conserve water, and reduce hazardous waste production.

HWTR's technical assistance helped business operators learn how to manage waste in ways that protect people and the environment, and thereby avoid paying significant clean-up costs. Our technical assistance visits increased the number of businesses that achieved and stayed in compliance with regulatory requirements. We routinely visited new businesses to explain hazardous waste handling requirements and best management practices.

We continued working with auto recyclers to remove mercury-containing switches from older vehicles prior to shredding or smelting the frames. Since the beginning of the switch rebate program in July 2006, approximately 80,000 switches have been collected. This prevented releases of more than 180 pounds of mercury into the environment.



2. **Urban Waters Initiative.** In July 2007 Ecology began using a comprehensive approach to restore and protect three water areas of the state: (a) the Lower Duwamish Waterway in Seattle, (b) Commencement Bay in Tacoma, and (c) the Spokane River. This team approach includes staff from several Ecology programs to clean up existing toxic sites, to improve water quality by controlling stormwater pollution, and to reduce and manage hazardous wastes generated by businesses and industries in UWI areas.



Toxics Cleanup staff began developing Source Control Action Plans for all 23 sub-drainage basins located in the Lower Duwamish Waterway. Data Gaps reports provide the foundation for the Source Control Plans.

These documents identify pollution sources, and prioritize and generate a list of source control actions we must accomplish to prevent recontamination of the sediments. The progress of the source control work is published in status reports. During the 07-09 biennium, we plan to finalize nine Data Gaps Reports, publish 11 Source Control Action Plans, and publish three Source Control Status Reports.

The UWI also partners with local governments by funding positions in each of the three focus areas. Ecology staff provide technical support; local source-control specialists assist small businesses by providing onsite pollution-prevention advice, Best Management

Practices updates, and education to control and prevent toxic pollution from reaching the waters.

(See "Part 2 – LTCA" section for more information about the Puget Sound Local Source Control Specialists and Urban Waters local specialists.)

Visit Ecology's internet site <http://www.ecy.wa.gov/biblio/0901002.html> for a complete look at the Urban Waters Initiative's focus on Commencement Bay and <http://www.ecy.wa.gov/programs/hwtr/lsp/> for information about the Local Source Control Partnership.

### 3. **Agricultural pesticide container recycling.**

Ecology partnered with Farwest Agribusiness Association to promote pesticide container recycling. Our pilot project established permanent drop sites, and successfully increased the number of containers recycled during 2008.

In response to the results of a Farwest survey of growers, pesticide applicators, and chemical distributors, we designed a pilot project to make pesticide container recycling more convenient. Partnering with Yakima County, two permanent collection containers were each placed near a Yakima County landfill, staffed by County employees. Opening these sites on multiple days during the week proved more convenient for farmers.

Use of the container collection stations increased after radio spots aired on local stations and after Farwest Agribusiness Association promoted pesticide container recycling at local winter conferences.

Washington state recycled 575,571 pounds of plastic from pesticide containers in 2008—an 18.5% increase from the 2007 pesticide container recycling rate. See also the next section describing State Agencies' expenditures, under "Department of Agriculture."

## Urban Waters Initiative

### Urban waters glossary:

**Cleanup**—Removing polluted soil or sediment, or "capping" a deposit with clean fill to prevent contamination from penetrating the cleanup site.

**Permit**—Ecology (or a local agency) issues a document to the operator of a business or facility that specifies the kinds and amounts of regulated substances the operation may release into the environment during a certain time or under a special condition.

**Sediment**—Mud or solid materials sink to the bottom of a water body; most pollution settles there, on the sediment.

**Source control**—Ecology uses a combination of methods (including source tracing and source reduction) to find the causes of pollution, and to reduce or eliminate them. Source control ensures cleaned areas won't be recontaminated by the same pollutants.

### Pollution pathways to urban waters:

**Stormwater**—Falling precipitation splashes over roads, rooftops, parking lots, and other hard surfaces; collects debris and pollutants, and carries them into water bodies and deposits them on sediment.

**Combined sewer outfalls**—Where utility managers combine their sanitary and rainwater sewers, heavy rainfall events can overwhelm the capacity of collection, transport, and treatment systems. An overwhelmed system may release raw sewage, allowing it to pollute urban waters.

**Groundwater**—If chemicals spill onto surface soil, and natural events (rain, snow) or human action washes those pollutants into the soil, then it can leach down to any waters located beneath the surface—to an aquifer that supplies drinking water, or to [under] ground water that flows into a river or other water body.

## Requiring Compliance, Acting on Environmental Threats—

Hazardous waste inspections comprise a critical regulatory line of defense between the millions of pounds of hazardous waste generated in Washington, and that waste's contamination of our soil and stormwater. We work to prevent tomorrow's toxic threats, as we strive to safely manage today's 120 million pounds of hazardous waste reported annually.

We require 4,500 businesses that handle hazardous substances to notify Ecology of their activities. But nearly 65,000 smaller businesses in Washington, that are rarely inspected, collectively produce millions of pounds. Small operators' mismanagement of hazardous waste (i) released toxic chemicals into our water, soil, and air, (ii) caused polluted stormwater runoff and (iii) required expensive cleanups.

- During 2008, HWTR staff performed 218 scheduled—or unannounced—compliance inspections at facilities that generate or manage hazardous waste. The inspections showed how well those facilities complied with state and federal regulations. We also resolved more than 250 serious environmental threats – the potential to pollute our environment through hazardous waste leaks, spills, and unsafe storage or containers.
- Unfortunately, the rate of our finding serious environmental violations at regulated businesses, reached 70 percent in 2008—the highest rate in 20 years. We found spills of toxic materials at 16 percent of these inspections. Such violations directly threaten human health and our shared environment.
- When a facility operator doesn't respond to technical assistance and informal enforcement efforts, we use our formal enforcement capability as a credible tool to resolve significant violations. HWTR issued three penalties in FY2008— fewer than the 6-8 penalties typically issued each year. The decrease in FY2008 reflects staff work on penalties carried over from FY2007, including defending against a legal appeal and our tracking performance where a facility's improved performance requirements accompanied the financial penalties.

## Permitting, Corrective Action, and Closure—

Ecology writes or modifies permits for issuance to facilities that treat, store, or dispose of hazardous waste (TSDs). The permit requires those facilities to operate in a manner that protects human health and the environment. Under authority of such permits or under Orders, HWTR staff manage cleanup at contaminated current or former TSD facilities.

Each such cleanup process moves through four steps—(1) discovery/ identification, (2) scoping/ investigation, (3) remedy design, (4) and remedy implementation. The full cleanup process usually takes 10-12 years to complete. Our goal is to complete cleanups at all existing TSD sites by 2020.

Through FY2008, we completed an overall average of 75% of the cleanup work needed at high priority sites, and 62% of the work at medium priority sites.

HWTR staffers also monitor facility performance under existing permits, to ensure TSD facilities comply with their permit requirements and contamination does not reoccur.

## Community Access to Hazardous Substance / Waste Information—

HWTR's automated data systems gather/collect, maintain/store, and report hazardous waste information. We retrieve and report the data to individuals and businesses, and to emergency responders, and local government decision-makers. Our Website, printed materials, telephone help line, and quarterly newsletters, provide the most current hazardous waste information available.

During 2008 we responded to 4,600+ calls or e-mails to our hazardous substance information hotline, and logged 383,000+ visits to toxic wastes-related Web sites.

## Program Administration

**State and Local Toxics Control Account funds help pay for program infrastructure. These services provide the foundation from which Ecology pursues our core mission and strives to fulfill the goals of the Model Toxics Control Act.**

### Administrative Services

Administrative Services includes information technology (desktop/network services, applications and data systems); facility and vehicle management, agency risk management; mail services, central records and public disclosure, and the library.

### Communication and Education

Communication and education can play a major role in protecting and improving the environment. The Office of Communication & Education (C&E) supports Ecology's mission and goals by employing communication, education, and information/outreach tools strategically and effectively.

### Financial Services

Financial Services' mission is to manage the agency's financial resources and support agency planning so that environmental goals and strategic priorities are met.

### Government Relations

- We coordinate all agency legislation requests. We work with legislators, their staff, and Ecology employees to ensure they hear our voice during each legislative session.
- We oversee Ecology's rule-making activity to ensure our processes comply with our state's rule-making laws and procedures.
- Our economists analyze proposed rules, permits, and legislation for economic impacts on stakeholders/taxpayers and interest groups.
- We exchange information about environmental governance within Washington tribes, and about environmental interests we share with British Columbia, Canada.

### Human Resources

Human Resources' mission is to assist in creating a safe, supportive, and diverse work environment for current and future Ecology employees. We offer comprehensive and innovative human resource activities to serve our agency's managers and employees.

## Nuclear Waste Program

**The Nuclear Waste Program regulates the storage, treatment, and disposal of both dangerous waste and “mixed” waste—at the Hanford Site and at certain non-Hanford facilities.**

Mixed waste contains both a hazard component and a radioactive component.

The Nuclear Waste Program collects fees from facilities in the state that manage mixed waste. This money goes into the State Toxics Control Account, from where the legislature appropriates it to the Nuclear Waste Program.

In Fiscal Year 2008, State Toxics Control Account funding helped pay for:

- Compliance inspections.
- Regulatory oversight.
- Technical assistance.
- Review and approval of permit applications at regulated mixed waste management facilities.

## Spill Prevention, Preparedness and Response Program

**The Spill Prevention, Preparedness and Response (Spills) Program relies on State Toxics Control Account funding to protect public health, public safety, and our environment.**

The funding pays costs of responding to, and cleaning up, oil and hazardous material spills. These activities include overseeing the cleanup of spills where a responsible party is taking appropriate action to manage the incident and minimize environmental damage. We also address “orphan” spills where the owner is unknown, unwilling, or unable to fund the necessary removal of hazards.

Ecology collaborates with the responsible party and with other government entities to manage spill incidents. The Spills Program responds immediately to spills that impact or threaten Washington’s waters. We respond as rapidly to releases of petroleum or other hazardous materials, to soil and air—a threat to public health and safety.

Other related activities the program engages in include:

- Participating in oil and hazardous materials spill response drills.

- Providing technical assistance for spill prevention and cleanup planning.
- Investigating spills to determine the cause and source.
- Providing training for first responders around Washington State.
- Taking appropriate enforcement actions.

### Fiscal Year 2008 Program Accomplishments:

- Ecology’s Spills Program responded to 3,893 reported spills.
- Our responders recovered 32,120 gallons of the reported 51,080 gallons of oil spilled (63% recovery rate).
- Our responders contained/recovered 57,224 pounds of hazardous material (other than oil products) from the environment.





On water cleanup of biodiesel-vegetable oil mixture.

## Chemical Spill at Biodiesel Manufacturer

In July 2007, Seattle Biodiesel discharged a 620 gallon mixture of sodium hydroxide, methanol, glycerin, biodiesel and vegetable oils into the Duwamish River. Clean-up contractors were mobilized to remove this mixture from the facility floor, a parking lot, and impacted shoreline. They also removed floating oil from the water's surface. Following a 3-day cleanup, the contractors had recovered much of the biodiesel and oil; but soluble portions of sodium hydroxide, methanol and glycerin were not recoverable.

## Responding to Meth Labs

The Spills Program uses State Toxics Control Account funds to pay costs to remove and dispose of hazardous chemicals and wastes found at clandestine methamphetamine drug labs. The number of illicit drug labs and associated abandoned dump sites rose dramatically through the mid 1990s. Since 2001 when the number of labs and dump sites peaked at 1,890, the number of reported labs has steadily declined. In FY 2007, Ecology responded to 252 reported meth labs and dump sites around Washington.

The Spills Program continues to coordinate with local governments and authorities on meth activities. **We are the only public agency in Washington that performs cleanup of the hazardous chemicals and waste that result from meth lab operations.** We've developed expertise in safely handling and disposing of some highly hazardous wastes found at meth labs, such as pressurized cylinders of anhydrous ammonia, ammonia generators, and pressurized containers of gaseous hydrochloric acid.

[For further perspective, see the "Drug Lab Program" described by the Department of Health.] See page 36.

## Mysterious Canisters on the Coast

During the 2007/2008 winter, hundreds of silver-colored one-liter canisters washed ashore along the central outer (Pacific) coast of Washington. According to local reports, the containers with red or white caps had been around for several months—though no one reported their presence to state or federal agencies, until March 2008. Thereafter the floating canisters received widespread media coverage, and Ecology distributed hundreds of cautionary flyers to coastal residents, park rangers, and the curious.

Tests of the canisters confirmed the presence of phosphine gas – a toxic product of aluminum phosphide residue in the canisters – used to kill rodents and other pests aboard cargo ships. Neither Ecology nor the U.S. Coast Guard determined the source of the canisters. Fortunately, the 55 canisters Ecology's spill responders recovered were empty, except for a small residue from the fumigant tablets. The emptied containers likely were thrown overboard, or they washed away, from a cargo ship traveling along Washington's Pacific coast.



Ecology publication  
warning of canister hazards

## Hazardous Materials Cleanup Completed in Lewis County Flood Zone

From December 2007 through June 2008, Ecology and Washington Conservation Corps (WCC) crews conducted cleanup activities where the December 2007 floods devastated Lewis County. Ecology's spill responders and WCC crews found and retrieved more than 2,800 containers deposited by floodwaters. We also collected and stockpiled 800+ tires for later disposal funded by an Ecology grant to Lewis County.

The flood cleanup effort resulted in the disposal of containers holding more than 3,500 gallons of oil, gasoline, paint-related materials, corrosive

Flood Debris in Lewis County.  
Photo: Ron Holcomb



liquids, and pesticides. In addition, we safely and properly discarded more than 17,000 pounds of oil-contaminated debris and empty oil and hazardous material containers.

## Solid Waste and Financial Assistance Program

### Ecology's Solid Waste and Financial Assistance Program conducts four main services with funding received from the State Toxics Control Account. Those services are:

1. Providing technical assistance and support to local governments confronting solid waste management issues.
2. Reducing persistent bioaccumulative toxins in the environment.
3. Regulating hazardous chemical releases from large industrial facilities (pulp and paper mills, petroleum refining and distribution systems, and aluminum smelters).
4. Regulating and overseeing cleanup projects on contaminated industrial sites or closed landfills.

### Technical Assistance—

The Solid Waste and Financial Assistance Program helps local governments safely manage/regulate "solid" waste throughout the state. Our mission is to reduce the generation of wastes, and our goal is to properly manage the recycling and reuse of source materials and the safe disposal of unusable wastes. Staff efforts focus on giving technical assistance, reviewing local permits, providing policy guidance, and conducting research on topics of statewide interest.

The Program provides professional hydrogeologic and engineering assistance on solid waste facilities design and operations to local health jurisdictions—a specialty area most jurisdictions lack. Design assistance might cover landfill liners, leachate collection systems, and groundwater sampling plans, to protect ground and surface water. The Program staff also offer technical trainings on revised solid waste regulations and annual compost facility operator training, to ensure safe and efficient operations. Finally, our Program staff review local permitting decisions to ensure consistent compliance with state regulations.

When needed, Program staff research recycling technologies and identify initiatives such as ways to turn today's farm wastes into energy and marketable chemicals.

## Reduce Persistent Bioaccumulative Toxins in the Environment—

Persistent, bioaccumulative toxins (PBTs) are a particular group of chemicals that can significantly affect the health of humans, fish, and wildlife. PBTs can cause cancer, impair immune systems, and damage human brains and nervous systems.

In 2005, we published a Chemical Action Plan for reducing uses of a flame retardant known as pentabromo diphenyl ether (PBDEs), found in many household products. This plan proposed to phase out the use of PBDEs statewide, find safe alternatives, and safely dispose of PBDE-laden products. Program staffers monitor lakes in Washington for mercury / PBDEs content. And in calendar year 2007 we also published a Chemical Action Plan for finding and removing lead from consumer products and homes.

In early 2006, the Solid Waste and Financial Assistance Program adopted the nation's first PBT regulation. The rule, developed under the direction of an Executive Order from Governor Locke in 2004, established specific criteria for identifying PBTs and a clear processes for developing chemical action plans—and for scheduling priority PBTs for future Chemical Action Plan development. In future years, we expect to develop chemical action plans to address polycyclic aromatic hydrocarbons (PAHs) and to battle perfluorooctane sulfonates (PFOS) in calendar year 2009.

## Industrial Section—

The Industrial Section focuses on some of the state's major industries by regulating air, water, and hazardous waste management activities at pulp and paper mills and at aluminum smelters, and by managing both water and hazardous waste at oil refineries. The section also manages site cleanup and demolition activities at these facilities when they close. Staff handle the complexities of these industries, they perform related environmental permit writing, conduct waste audits and site inspections, and enforce industry-specific compliance requirements.

Solid Waste and Financial Assistance Program staff provided technical oversight for cleanup activities at contaminated industrial sites and at solid waste landfills located across the state, including:

### Lilyblad, Tacoma

- Ecology amended the Agreed Order, entered with Lilyblad in August 2006, requiring the permittee to conduct a focused Feasibility Study. Under Ecology oversight, the Feasibility Study was completed January 2007.
- In June 2007, Ecology issued an Enforcement Order requiring Lilyblad to implement the interim Cleanup Action Plan (CAP); the final CAP was issued in October 2007.
- When Lilyblad did not comply with the enforcement order, Ecology prepared to fulfill the CAP. The cleanup would be state-funded, with Ecology's oversight.
- Ecology secured a lien on the property to cover the cleanup costs.
- Ecology planned to publish the remedial action work plan in February 2009, and begin construction the following month (March 2009).

### Emerald Kalama Chemical, Kalama

Ecology entered a Consent Decree in March 2008 with the former plant owner, Goodrich, and with the current plant owner, Emerald Kalama. The Consent Decree prescribes how to implement the site Cleanup Action Plan.

- Goodrich submitted the engineering design report, operations & maintenance manual, and construction drawings for Ecology's review.
- Cleanup includes (i) upgrading recovery wells to extract contaminated groundwater, (ii) applying vapor extraction on the most contaminated soil area, and (iii) using Waterloo® emitter wells to treat the groundwater.
- The recovery wells and emitter wells were to be installed and operating in March 2009. Emerald Kalama Chemical planned to start the soil vapor extraction system in May 2009.



## Water Quality Program

**The mission of the Water Quality Program is to protect and restore Washington's waters. State Toxics Control Account funds pay for activities that help us pursue and fulfill our mission.**

### Lower Columbia River N.E.P.—

Congress established the National Estuary Program in 1987 to identify those nationally significant estuaries threatened by overuse, development, and pollution. The Program would help develop local management plans designed to protect and preserve those important natural systems. The Lower Columbia River entered the National Estuary Program in 1995.

The State Toxics Control Account funded a grant to the Lower Columbia River National Estuary Partnership (the Partnership) whose Board members include representatives from:

- Washington State Office of the Governor
- Oregon State Office of the Governor
- Washington State Department of Ecology
- Oregon Department of Environmental Quality
- U.S. Environmental Protection Agency
- Industry and Commerce
- Local Governments and Citizens

The Partnership identified eight priorities, including conventional pollutants and toxic contaminants in storm water, and contaminants found in sediments and fish.

### Aquatic Pesticide Program—

The program aims to reduce risks to human health and the aquatic environment from exposure to pesticides used to manage aquatic weeds, invasive plants, and foreign water-dwelling creatures. We developed and clarified rules that pertain to aquatic pesticides and we gave expert technical assistance to pesticide applicators, lake associations, and similar interests. We also gave permit information to chemical manufacturers, and to pesticide applicators and their client groups; we provided materials to educate these interest groups about the uses and dangers of specific pesticides and about using other methods to control aquatic pests.

### Limit Toxics Contamination—

Water Quality Staff applied their expert knowledge to develop water quality standards (concentration limits) for toxic substance incursions.

We began with ways to assess the human and environmental health risks of exposure to toxics in water bodies, and we collaborated with Wastewater Discharge Permit Writers who use water quality standards to set effluent limits. Staff also led work groups seeking ways to reduce toxic substances in water, including an inter-agency committee developing Ecology's strategy to combat persistent bioaccumulative toxic chemicals (PBTs), and the interagency Marine Toxics work group.

### Stormwater Program—

The federal Clean Water Act and our state laws require entities (approximately 2,000 businesses and 100 local or municipal governments) to obtain a National Pollutant Discharge Elimination System (NPDES) permit before they may discharge stormwater into Washington's water bodies.

State Toxics Control Account dollars allowed our staff to:

- Develop new permits, providing a compliance pathway to industrial facility operators and to local government entities.
- Provide technical assistance and support to permit holders.
- Develop and maintain tools to help permit holders and others operate their facilities in ways that meet our stormwater management requirements.

State Toxics Control Account funds provided \$3,000,000 to non-Puget Sound communities to retrofit existing stormwater projects, remove non-stormwater discharges into municipal stormwater treatment systems and to fund local innovative stormwater management grants.

### Upgrades for State Parks—

The legislature appropriated \$2,100,000 from the State Toxics Control Account for the sole purpose of upgrading the wastewater treatment systems at Illahee, Fort Flagler, and Larrabee state parks.



## Environmental Assessment Program

**The Environmental Assessment Program collects and shares data to provide objective, reliable information about environmental conditions.**

Ecology uses the data to:

- Measure agency effectiveness.
- Inform our public policy-making.
- Focus the use of limited agency resources.

The program monitors and reports environmental status, trends, and results. The reports offer access to reliable environmental information, thus ensuring that Ecology staff, citizens, governments, tribes, and businesses can use it to affect their operations.

Program activities include:

- Studying the environmental impacts of toxic pollutants in priority water bodies.
- Technical investigations and preliminary conclusions about toxic chemical contamination in marine and freshwater aquatic organisms, in sediments, and in groundwater (subsurface water supplies).

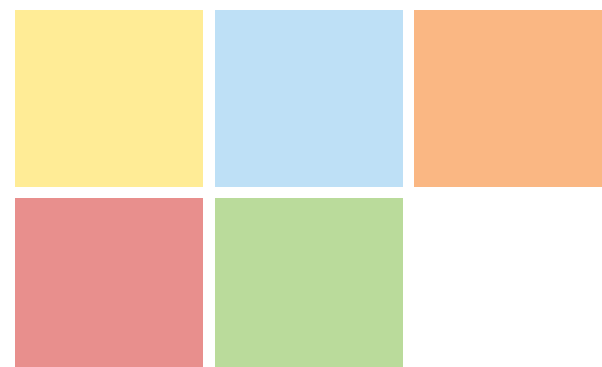
Staff also conduct total maximum daily load evaluations—a process to identify sources of toxic substances in priority watersheds, and to subsequently recommend pollutant load reductions methods, necessary to achieve compliance with state water quality standards. Activities we conducted during Fiscal Year 2008 included:

- **Assessment of sediment toxicity near Post Point.** The program collected sediment samples near the Post Point wastewater treatment plant on Bellingham Bay. Results of the study did not show widespread or severe sediment toxicity. We assume that extensive follow-up studies are not necessary at this time.

- **Long-term effectiveness in monitoring at toxics cleanup sites.** We collect groundwater data quarterly—at multiple sites statewide—to determine whether cleanup standards have been met or additional remedial actions are needed.
- **Toxics monitoring.** Continued implementing the Washington State Toxics Monitoring Program. The program is designed to evaluate concentrations of a variety of toxic chemicals in edible fish tissue. Based on recent sampling of freshwater fish from 14 lakes, the program recommended 11 lakes to be added to the federal Clean Water Act Section 303(d) List for Washington State.



Fish collected by the Toxics Monitoring Program



## FOR IMMEDIATE RELEASE – June 18, 2008

### 08-171

#### State scientists sleuthing toxic threats

OLYMPIA – This summer, if you pass someone wading into a stream to collect a sample, or hanging from a bridge to install a stream gauge, or scrambling along a road loaded down with equipment, you may be seeing a Washington Department of Ecology (Ecology) scientist at work.

Ecology scientists now in the field through October, will conduct environmental monitoring for a number of toxic chemicals. This year – for the first-time ever – they will collect samples of water, fish, and even osprey eggs, to test for the presence of persistent perfluorinated chemicals (PFCs).

One of Ecology's strategic priorities is reducing toxic threats in the environment.

Scientists know very little about PFC levels in Washington. These chemicals remain in the environment (persist) and get into the food chain (bioaccumulate). PFCs share similar characteristics to DDT and PCBs, toxic chemicals banned decades ago; they are very persistent, appear to be widely dispersed in our environment, and are found in human blood.

One common PFC, perfluorooctanoic acid (PFOA), is used to manufacture fluoropolymers that provide water- and fire-resistant coatings for consumer products such as non-stick cookware and outdoor clothing. Another PFC, known as perfluorooctane sulfonate (PFOS), is now used primarily to manufacture semiconductors.

"Even though industries may be taking steps to reduce the persistent chemicals they use and release to the environment, we need to know right now what levels are out there. . .so we can assess the seriousness of the problem and determine what other actions might be necessary," said Rob Duff, who manages Ecology's science wing, its Environmental Assessment Program. "Monitoring now is important because it helps us get out front to establish a baseline and see whether levels go down later."

Persistent chemicals in the food chain are a growing concern for the state. These chemicals pervade consumer products, food, and industrial pollution. They taint our air, water, soil, and wildlife. And, they show up in people, where they can cause health problems.

Ecology's field monitoring provides the foundation for the state's strategies to prevent, cleanup, and manage "persistent, bioaccumulative toxic" (PBT) chemicals. The monitoring work informs decisions about the need for fish-consumption advisories, the work identifies polluted waters, and it helps the state prioritize efforts to clean up contaminants.

By late 2011, Ecology expects to complete a chemical action plan to target members of the PFC chemical family.

- Scientists will study osprey eggs in the lower Columbia River, below Bonneville Dam, for early warning signs of problems with PFCs in Washington.
- Ospreys are a good indicator species for toxic substances because they feed on fish near their nests.
- Ecology's partners in the osprey egg monitoring effort include the U.S. Geological Survey and the U.S. Environmental Protection Agency.

In addition to looking for PFCs, Ecology scientists will collect fish samples this season to test for PCBs, dioxin, mercury, flame retardants and pesticides. They will analyze sediments for mercury and lead content, and Ecology scientists will also test fish for toxic algae contamination.

Follow this link for a list of sites, by county, Ecology scientists monitored in 2008:

<http://www.ecy.wa.gov/programs/eap/toxics/docs/toxmonsites2008forweb.pdf>

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For more information:

Ecology's PBT Initiative: [www.ecy.wa.gov/programs/swfa/pbt/](http://www.ecy.wa.gov/programs/swfa/pbt/)

Environmental Toxics Monitoring: [www.ecy.wa.gov/programs/eap/toxics/index.html](http://www.ecy.wa.gov/programs/eap/toxics/index.html)

Ecology's Web site: [www.ecy.wa.gov](http://www.ecy.wa.gov)

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Office of Communication and Education Ecology's Home Page: <http://www.ecy.wa.gov>

## Shorelands and Environmental Assistance Program (SEA)

**The SEA Program received funds from the State Toxics Control Account (STCA), specifically to regulate dredging operations and to ensure that contaminated sediments were safely removed and disposed.**

### Dredging Increased

Recent increased numbers of dredging projects in Puget Sound, and increased amounts of material dredged at those projects, result from three factors:

1. Economic development activity by Puget Sound Ports.
2. Navigational dredging to make water ways passable by large ships.
3. Sediment cleanup activities to improve water quality in the near-shore marine environment for people and fish.

### State Toxics Support

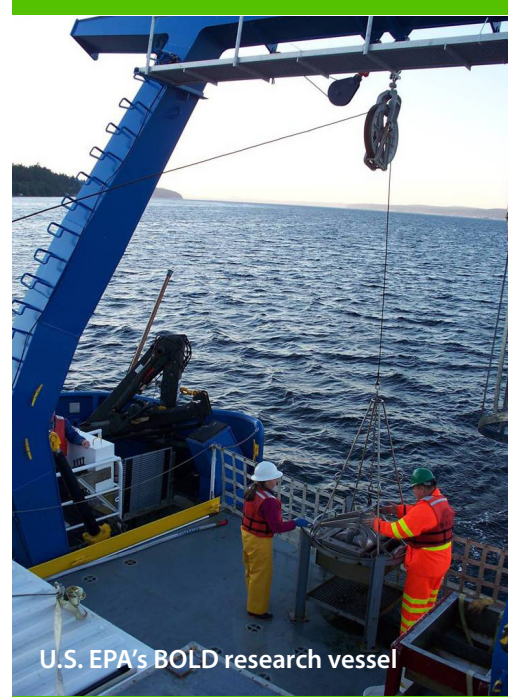
STCA funding paid for one full-time employee to focus on Ecology's duty to prevent dredging projects from creating new contamination.

STCA funding helped Ecology manage the following activities affecting Puget Sound dredging projects:

- Evaluating sampling and analysis plans to determine their suitability for each proposed project and its site.
- Scrutinizing project plans to ensure they include appropriate dredging operations, water quality monitoring protocols, and post-dredge affects monitoring.
- Providing special guidance for addressing bioaccumulative chemicals of concern.
- Updating our freshwater sediment quality guidelines.
- Developing guidance to avoid risks posed by dioxin-contaminated dredged material.
- Revising our regional sediment evaluation framework.

### Collaboration

The staff person funded by this money supports the multi-agency and the multi-state dredged material management programs for both fresh and marine water sediments. This combined group of experts conducted an extensive Puget Sound wide monitoring program from on board the U.S. EPA's BOLD research vessel (see picture).



U.S. EPA's BOLD research vessel



## Department of Agriculture

### In Fiscal Year 2008, funding from the State Toxics Control Account supported several pesticide-related environmental protection activities carried out by the Washington State Department of Agriculture (WSDA) through our Pesticide Regulation program.

#### Identify, collect, dispose

The department's Waste Pesticide Identification and Disposal activity protects water and land from potential pesticide contamination. Our objectives are to:

- Reduce and eventually eliminate stockpiles of unusable pesticides stored at farms and similar rural locations; and
- Prevent future accumulations of unusable pesticides by providing technical assistance and education to pesticide users.

In FY 2008, WSDA hosted 14 regional collection events and three special collection site events. In all, we collected 110,499 pounds of unusable pesticides and pesticide-laden materials, from 294 customers.

We collected pesticides at two types of events: (1) At regional events, customers brought their waste pesticides to a collection site during a scheduled date and time. (2) At special site events, WSDA staff traveled to customers' sites and assisted them with packing and handling pesticides that could pose extra risk if brought to a regional event. WSDA took possession of the pesticides and assumed legal responsibility for their proper disposal by a federally licensed hazardous waste management company.

**Table 8: Waste Pesticide Disposal Projects Performed by WSDA - Fiscal Year 2008**

Collection Event	When	Customers	Pounds	Disposal Cost	Per pound
Pasco Regional	10 / 4 / 07	36	32,695	\$49,558.07	\$1.52
Okanogan Regional	10 / 17 / 07	15	2,910	\$6,379.48	\$2.19
Orondo Regional	10 / 18 / 07	26	7,125	\$11,199.64	\$1.57
Centralia Regional	4 / 1 / 08	9	868	\$2,441.94	\$2.81
Elma Regional	4 / 2 / 08	6	2,083	\$3,418.16	\$1.64
Olympia Regional	4 / 2 / 08	7	2,517	\$4,827.30	\$1.92
Pullman Regional	4 / 22 / 08	13	9,210	\$17,002.37	\$1.85
Dayton Regional	4 / 23 / 08	15	3,184	\$7,526.24	\$2.36
Yakima Regional	5 / 19-20 / 08	61	18,889	\$28,889.82	\$1.53
Wenatchee Regional	5 / 21-22 / 08	30	7,704	\$15,445.07	\$2.00
Seattle Regional	6 / 10 / 08	14	3,006	\$5,828.86	\$1.94
Bremerton Regional	6 / 11 / 08	10	2,390	\$5,409.03	\$2.26
Snohomish Regional	6 / 24 / 08	11	10,791	\$13,927.67	\$1.29
Fall City Regional	6 / 25 / 08	11	2,350	\$4,639.85	\$1.97
<b>Regional total FY 2008</b>	<b>14 events</b>	<b>264</b>	<b>105,722</b>	<b>\$176,493.50</b>	<b>\$1.67</b>
Ridgefield Special	10 / 9 / 07	1	87	\$510.52	\$5.87
Yakima Mini event	10 / 15 / 07	19	4,065	\$7,066.11	\$1.74
Chelan County Special	10 / 16 / 07	10	625	\$2,095.16	\$3.35
Special site total FY 2008	3 events	30	4,777	\$9,671.79	\$2.02
<b>Total FY 2008</b>	<b>17 events</b>	<b>294</b>	<b>110,499</b>	<b>\$186,165.29</b>	<b>\$1.68</b>

\*The average amount collected per customer during fiscal year 2008 is approximately 376 pounds.

\*Since the program began in 1988, it has collected and properly disposed of 2,110,274 pounds of pesticides from 6,241 customers.

\*The average amount collected per customer for the entire program (1988 - June 2008) is approximately 338 pounds.



- This program identified, collected, and properly disposed of significant amounts of persistent, bioaccumulative and toxic pesticides (PBTs known to build up in the food web) such as dinoseb, DDT, endrin, parathion, pentachlorophenol and lead arsenate.
- We removed cyanide-based pesticides and highly toxic vertebrate poisons from private storage locations.

We consider these priority pesticides due to their potential to adversely impact public health and the environment through accidental exposure or intentional misuse.

WSDA published an historic review of the program, this year. Our Waste Pesticide Identification and Disposal Report 1988-2007, is available to read or download from [http://agr.wa.gov/pestfert/pesticides/docs/WPID\\_Report.pdf](http://agr.wa.gov/pestfert/pesticides/docs/WPID_Report.pdf).

### Avoiding pesticide waste

To help prevent future accumulations of unusable pesticides, we at WSDA encourage pesticide users, distributors, and retailers, to stay current with federal and state laws on use by browsing our website before each application season; and we urge them to limit their pesticide purchases to the amounts needed for one specific application or season.

At the end of FY 2008, WSDA began work with the Department of Ecology to create a pilot project, designed to increase efficiency and improve customer service for waste pesticide collections statewide.

We need to continue this collections activity as pesticides become unusable “waste” due to pesticide use pattern changes, to federal and state pesticide registration restrictions or bans, and to resulting chemical production discontinuation.

Find more information at <http://agr.wa.gov/PestFert/Pesticides/WastePesticide.aspx>

## Water Quality and Endangered Species Data

### Collecting and sharing data

WSDA regularly collects water quality data, [authorized and unauthorized] land use practices, and pesticide management records, to evaluate the impacts of pesticide use on threatened/endangered species and on ground water (under-surface water bodies or flows) and surface water resources. We link the data together in a geographic information system database and related tool set.

WSDA shared the data with sections of the Environmental Protection Agency (EPA), and of the National Oceanic and Atmospheric Administration’s (NOAA’s) Fisheries Service division. All three agencies accessed the data to inform our own regulatory decisions about pesticide registrations and uses. We also used the data to evaluate whether EPA-listed “pesticides of concern” posed a risk to surface water quality in Washington. If so, then the data guided our designs of management measures to address those risks.

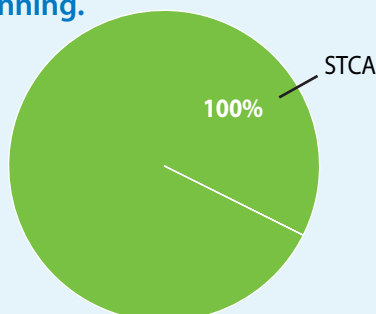
As part of an EPA national strategy begun in 2007, we used this data and ground water quality data, to assess pesticides’ potential impacts to human or environment health.

Through a surface water monitoring program conducted in cooperation with the Department of Ecology, WSDA compiled four years of data collected from an irrigated agricultural watershed in the lower Yakima River basin, and from an urban watershed in Seattle (the Cedar-Sammamish). This combined data showed generally low concentrations of all the pesticides we detected—close to analytical detection limits. The herbicide dichlobenil was the most commonly detected pesticide in the urban watershed. In the agricultural basin, the herbicide 24-D was the most commonly detected pesticide. (WSDA also detected chlorpyrifos, malathion, and azinphos methyl in the agricultural area; we’ve been working with commodity groups to discover and address possible sources.)

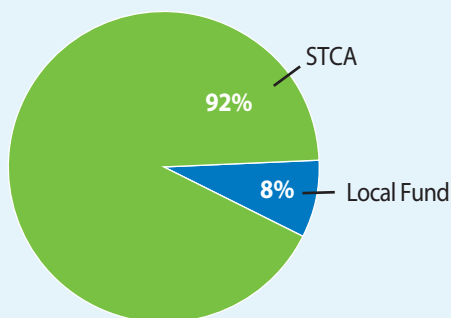
Sampling in a western Washington watershed of agricultural significance (the Skagit) began in 2006, and in an agricultural area of the Upper Columbia River basin in 2007. The sampling within the Upper Columbia watershed, detected endosulfan (an insecticide) at federally determined Levels of Concern. Measures to address these detections are currently underway and area growers are using the Water Quality Protection Strategy approved by the EPA.

Find more information at: <http://agr.wa.gov/PestFert/NatResources/EndangSpecies.aspx>

**Figure 10: Funding for waste pesticide collections planning.**



**State Toxics Control Account: \$433,400 (FY 2008)**

**Figure 11: Funding waste pesticide collection.**

**State Toxics Control Account: \$1,204,700 (FY 2008)**

## Pesticide Compliance and Registration

The State Toxics Control Account provides funding for three positions in WSDA's core Pesticide Regulation program: one in the Compliance program and two in Registration.

### Compliance assistance

The Compliance position covers all irrigated areas of the state and provides technical assistance to those involved in chemigation (the application of pesticides, plant or crop protectants, or related compounds, with irrigation water). We offered technical assistance to commercial applicators, row crop growers, irrigation equipment distributors and manufacturers, irrigation district members, farm chemical distributors and consultants, lawn care businesses, and others.

Our technical assistance program emphasized system inspections and education. In 2008, WSDA made presentations to about 650 people showing how to properly set-up and use a chemigation system. New EPA fumigants re-registration activities increased grower demand for the information. By request, field staff inspected 83 separate systems, helping growers come into compliance with federal and state requirements.

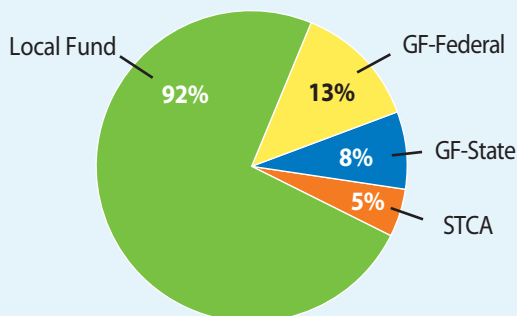
## Registration data

The two funded Registration positions provided WSDA with the capacity to conduct assessments, to determine whether a special local need or emergency would warrant the limited use of certain pesticides not registered with EPA for such use. Staff reviewed residue, efficacy, and adverse effects data, to ensure pesticides use would not threaten human health, endangered species, beneficial organisms, the environment, or ground and surface water. These registrations permit Washington's agricultural industry, with its extensive crop diversity and specific pest control needs, to focus pesticide uses to their narrowest effective application.

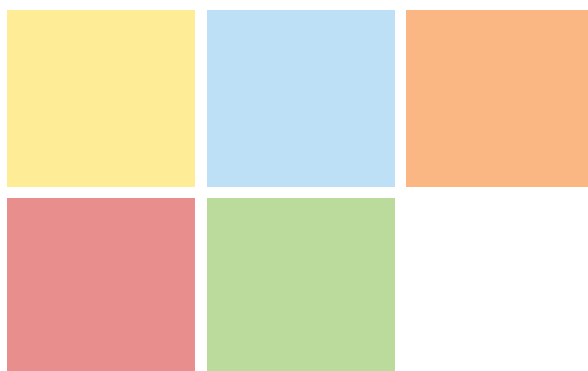
## Environmental value

These compliance and registration programs ensure that pesticides are used safely, and that appropriate pesticides are available to protect Washington's agricultural products.

Find more information on these activities at <http://agr.wa.gov/PestFert/default.htm>.

**Figure 12: Funding chemigation systems inspections and education.**

**State Toxics Control Account: \$231,980 (FY 08)**



Department of Natural Resources

Creosote Debris and Piling Removal—

During Fiscal Year 2008, the Department of Natural Resources (DNR) expended about \$1,001,624 of State Toxics Control Account funding to continue its creosote debris removal program, including derelict pilings and structures, throughout Puget Sound. Our goals and objectives for this program included:

- Reducing creosote and treated wood contamination in the sediments and water column of marine and estuarine environments;
- Reducing the potential for human exposure to those contaminants on public beaches;
- Educating the public about impacts of creosote in the marine and estuarine environment;
- Removing dilapidated pilings and structures; and
- Encouraging the replacement of creosote treated wood with non-toxic materials.

Our MTCA expenditure supported public education about the hazards of creosote exposure and other marine-related issues. Volunteers informed our choices of sites for beach-based removals. Beach Watchers volunteers inventoried creosote debris and assisted in its removal when feasible.

Main resources at risk from exposure to creosote and its primary components (PAHs) include herring spawn, English sole, other forage fish, juvenile salmonids, and area marine sediments.

Program priorities / project selection criteria

Derelict pilings and structures gained top priority for removal, where (1) habitat features were highly valued and where (2) removal of the structures would help spur future restoration at the site. This program reached several sites where our removing derelict structures jump-started habitat restoration and recovery.

We also considered economic factors in our decision-making. While the focus of the program was first to remove toxics treated derelict structures, we also provided funding to organizations that were

redeveloping or repairing docks. Funding these projects encouraged and enabled removal of creosote-coated wood pilings, and their replacement with steel or concrete, where such work would not otherwise have been financially feasible.

Progress measurement

Within the creosote program, we measured progress in “tons of creosote-treated materials removed” from beach clean-ups. We also measured our progress by the number of derelict structures removed or in numbers of pilings removed.

Accomplishments during Fiscal Year 08 for the Piling Removal Projects and Beach Debris Removal Projects are detailed below:

- **Piling Removal Projects:**
  - Total Number of Sites: 4 (in two counties)
  - Total Tons of Creosote-Treated Material Removed: 838.21
  - Total Number of Pilings Removed: 959
  - Total Square Feet Overwater Structure Removed: 16,000
- **Beach Debris Removal Projects:**
  - Total Number of Sites: 10 (in eight counties)
  - Total Tons of Creosote-Treated Material Removed 511.34

What the money bought

DNR staff planned and supervised all project work. We hired marine contractors to remove pilings through Public Works projects. We removed hazardous wastes by hand hauling or using heavy equipment (crawler cranes or backhoes), and transported them for proper disposal off-site via barge, tug boat, or helicopter. Removing toxins from public beach sites and marine shore lands benefitted the habitats and organisms, and increased public safety by reducing access to numbers of toxic objects and by removing toxics exposure routes.

## Department of Health

In 2008, the Department of Health (DOH) received \$1,698,000 from the State Toxics Control Account to perform environmental health protection, monitoring, and assessment activities. We designed these activities to identify and protect people from random exposure to toxic substances released into the environment.

The Department also addressed public concern over emerging issues, such as:

- Recognizing persistent, bioaccumulative and toxic chemicals (PBTs),
- Health concerns related to mercury contamination in aquatic species (sea creatures and their predators),
- Implementing new National Ambient Air Quality standards for (limits on releases of) particulate matter and ozone,
- Protecting children from exposures to area-wide lead arsenate contamination, dioxin and non-dioxin polychlorinated biphenyls (PCBs),
- and trying to fill the need for efficient and effective health education, particularly efforts directed to diverse cultural and ethnic populations.

### Drinking water contamination

Our Office of Drinking Water staff provided technical support to restore water systems impaired by a variety of dangers:

- We consulted with the local health jurisdiction, municipalities, and consultants in the Lewis County area, regarding their flooding events. From work spaces at the Drug Abuse Prevention Center, we helped interpret analytical results, determined monitoring requirements, and designed remedial activities to address the contaminated water source.
- We worked with guardians of more than 60 water systems where nitrate concentrations rose above the maximum contaminate level (MCL), 110 systems where arsenic contamination exceeded the MCL of 10 mg/L, and 3 water systems where Uranium contamination measured above the maximum contaminate level. Our technical assistance efforts and site consultations included providing information about correction options, public notification requirements, and monitoring schedules.

### Drug lab cleanup program

Potential health hazards at illegal drug manufacturing (Clandestine Drug Lab—CDL) sites include exposures to (i) area-wide residual methamphetamine contamination and (ii) to hazardous wastes generated during the process:

- CDL site remediation frequently involves conducting environmental assessments of contaminated soil, septic systems, groundwater, and surface water, before cleaning or removing contaminated surfaces throughout the CDL structures.
- CDL cleanup practitioners must follow national Occupational Safety and Health Agency and state Model Toxics Control Act regulations. We treat CDL sites as we do other hazardous waste sites, applying the same types of environmental assessment methods and cleanup safety procedures.

Law enforcement agencies report decreasing numbers of clandestine drug lab discoveries; we attribute the trend, in part, to pharmaceutical control measures imposed to reduce availability of key ingredients used for manufacturing methamphetamine. Historically, “meth cooks” circumvented law enforcement efforts by changing their recipes and manufacturing methods. We stay abreast of new CDL-related research and data that allows the program to adapt in the rapidly changing world of drug lab remediation.

We currently respond to 20-30 telephone and e-mail inquiries, and requests for technical assistance, each week. The enquiries come primarily from Local Health Officers and concerned citizens; they typically involve practitioner certification, but also include a broad range of other CDL-related issues. Our CDL Program Website continues to be an important education and outreach tool, with 38,000 page hits and over 43,000 downloaded documents in 2007.

Our CDL program maintains the degree of program activity needed to respond to the current level—and the readiness to respond to future increases—of illegal drug manufacturing.

- The CDL Program doubled training opportunities when we certified a second training provider, located in the Spokane area. This new trainer provides comprehensive training courses to certify workers and supervisors in the remediation of contaminated properties.
- The CDL Program maintained the certification of twelve CDL cleanup contractors, and we conducted a refresher training class for approximately 85 CDL clean-up workers, supervisors, contractors and local health jurisdiction staff.



## Indoor air quality

The Indoor Air Quality (IAQ) Program offers technical assistance, training, and information about potential health impacts of poor IAQ, and we recommend designs or approaches to prevent and respond to IAQ problems.

We respond to hundreds of inquiries each month. Tenants, property owners, landlord associations, private and public school teachers and administrators, local health jurisdictions, and others, pose questions about a broad range of IAQ issues.

Our IAQ program and School of Environmental Health & Safety (SEHS) program websites provide an important education and outreach tool, receiving more than 239,000 page visits and over 109,000 downloads in the 2007-2008 period. Information and resource links include environmental health concerns related to: asbestos, asthma, carbon monoxide, formaldehyde, mold, ozone, pesticides, and general IAQ.

Our nine fall workshops for school and local health jurisdiction staff, provided training on (i) developing IAQ programs in schools, (ii) responding to IAQ concerns, (iii) hidden high-hazard chemicals, (iv) safe cleaning methods and products, and (v) the DOH IAQ Monitoring Station Loan Program. Materials for the workshops are maintained on and available from the SEHS program website.

Program staff provided technical support for the first major revision since 1971, of the Washington State Board of Health's, K-12 school environmental health and safety rules. A revised rule (Chapter 246-366A WAC) includes sections about proper construction, maintenance, and operations in the topic areas of heating, ventilation, and source control of pollutants of public health significance.

Staff continues to work with the State Building Code Council (BCC) as a member of the Mechanical Code Technical Advisory Group.

IAQ staff worked closely with the DOH Carbon Monoxide Poisoning Prevention workgroup to design the public education component, and to help purchase 700 carbon monoxide detectors, for distribution to low income families by the Washington State Fire Safe Families Project.

Mold-related issues continue to concern operators and users of residential rental units. In response, our IAQ program replicated, and supplied to landlords and tenants, English and/or Spanish versions of EPA's A Brief Guide to Mold, Moisture, and Your Home. The IAQ program also purchased and made available in DVD format, more than 500 copies each of two videos produced by the Northwest Clean Air Agency: "Mold in Your Home: Causes, Prevention, and Clean-up" and "Attack Asthma at Home" for landlords/tenants, and homeowners.

## Toxic cyanobacteria\*

\*The cyanobacteria of concern are generally freshwater or brackish water species, commonly found as 'blooms' in slow-flowing, nutrient-rich waters. Cyanobacteria usually bloom during the warmer months of the year, when both temperature and sunlight are optimal. The blooms often appear in farm dams or ponds where very little mixing occurs, and warm water layers form near the surface. The highly toxic 'scum' material that forms on the water surface, poses a potential danger to livestock and to humans.

DOH and Ecology worked together on issues associated with toxic cyanobacteria.

- Ecology's Freshwater Algae Control Program tested for microcystins and anatoxin-a in lake samples collected by citizens, local health jurisdictions, or agency representatives.
- DOH published recreational guidelines for avoiding exposures to microcystins and anatoxin-a, a DOH lake management protocol used by local health jurisdictions when a bloom occurs.
- DOH staff collaborated with Ecology and local health jurisdictions, when needed, to interpret toxicity tests for human health exposures and to make recommendations about lake postings and closures.

Outreach produced by DOH included an informational pamphlet about toxic cyanobacteria, and a website with related toxicity facts and human health information. We held five workshops around the state to inform local health jurisdictions and agencies about recreational guidelines and lake protocols. DOH provided direct assistance—related to cyanobacterial blooms—to Clark, Grant, and Grays Harbor Counties; to Island County, Jefferson County, and King County; to Kitsap, Lewis, and Mason Counties; and to Pierce County, Skagit County, and Walla Walla County.

## Puget Sound action

DOH, Ecology, and other agencies, worked on a technical committee to develop several Puget Sound conceptual models for human health, and to identify and prioritize criteria to choose human health indicators for Puget Sound. DOH also contributed to the Human Health Forum document and workshops organized by the Puget Sound Partnership in preparation of the Puget Sound Action Agenda.

## Site assessments

Staff from the Site Assessment Section, work closely with personnel from Ecology's Toxic Cleanup Program. The section assesses exposure to hazardous substances in the environment released from either state-supervised (MTCA) or federal Superfund (CERCLA) hazardous waste cleanup sites. Our program receives funding from both the State Toxics Control Account and from the federal Agency for Toxic Substances and Disease Registry (ATSDR).

Examples include:

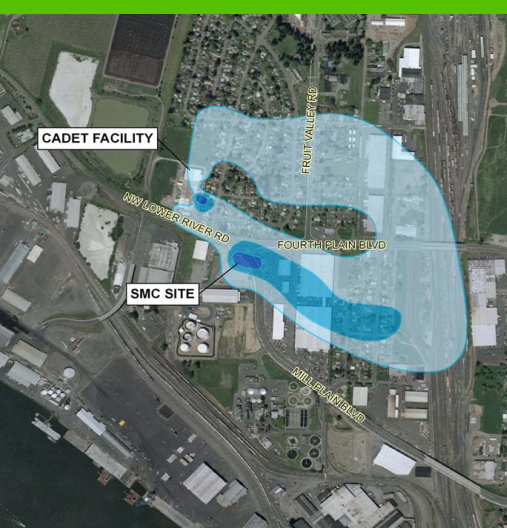
### Cadet Manufacturing Company and Former Swan Manufacturing Company (SMC)

In the late 1990s, chlorinated solvents, particularly trichloroethylene (TCE) and tetrachloroethylene (PCE), were discovered in groundwater underlying a portion of the Fruit Valley neighborhood, a predominantly residential community, located down-gradient of the Cadet and the former SMC properties in Vancouver, Washington. -- Department of Ecology oversight

The Washington Department of Health has been evaluating possible health risks at these sites since 2001. We pursue two public health goals there: (1) Assess, and reduce where necessary, possible community exposures to solvent vapors migrating from the contaminated groundwater. Solvent vapors below the neighborhood extend somewhat beyond the groundwater plume boundaries shown on the map.

(2) Work closely with Ecology to evaluate the health risks posed by the solvent-contaminated groundwater: Review plans and reports to assess the nature and extent of contamination in soil, groundwater, and indoor air; determine whether planned cleanup measures protect health; and assess whether solvent gasses in indoor air pose a health risk to the community.

The Department of Health has also assisted Ecology in educating the community about the health risks associated with the two sites. Education and outreach methods included presentations at public meetings and providing educational material—e.g., steps that community members can take to reduce their possible exposures.



**Aerial view of  
Cadet Facility  
and SMC site**

## Port Townsend Paper Corporation

Port Townsend sits at the extreme northeastern end of the Olympic Peninsula, in Jefferson County, at an elevation of 131 feet. The 2000 census indicated a population of 8,334 persons.

The active Port Townsend Paper Corporation's (PTP) mill, located just south of Port Townsend, began operations in 1927. The mill currently employs approximately 325 full-time workers, in the manufacture of unbleached Kraft pulp paper and lineboard. The mill produces approximately 941 tons of pulp per day—approximately 2/3 unbleached Kraft pulp and 1/3 recycled pulp from corrugated cardboard—for sale both domestically and internationally.

Local residents expressed concerns about both past and potential health impacts of air emissions from the PTP mill. This study summarized those health concerns regarding air pollution, and responded to questions from the community. We set two public health goals for this site:

1. Determine people's exposures to air toxics in the vicinity of the PTP mill and investigate incidences of disease.
2. Ensure that the community has the best information possible about how to protect its health from air toxics.

Working with the Department of Ecology, the PTP mill, Jefferson County Public Health, and the Port Townsend community, we reviewed the available environmental (e.g., air pollution data) and health data (e.g., epidemiological data). We published the information to educate local residents about the releases of air pollution and what we learned about the health effects of mill emissions.

The Department of Health's study concluded that we lack sufficient data to link health impacts with specific emission sources in Port Townsend. We need air monitoring data showing levels of chemicals emitted by the mill that may impact surrounding neighborhoods. To identify specific cause(s), we need information on all possible exposure factors.

In response to the recommendations listed in the health consultation, the Department of Ecology issued an Agreed Order, listing steps the PTP mill must take to obtain that additional information about the mill's emissions. [Contact Ecology's Industrial Section Public Disclosure Coordinator Kathy Vermillion (360) 407-6916, and schedule an appointment to read the Agreed Order, or obtain a copy of the document.] The PTP mill's collection of additional air emissions data will enable us to complete an assessment of possible impacts on the broader community.

Among other measures listed in the Agreed Order, in October 2008, PTP mill promised to install a weather station to track temperature, wind speed, wind direction, relative humidity, and barometric pressure. You may access the weather data through a link posted on Port Townsend Paper Corporation's website, [www.ptpc.com](http://www.ptpc.com), or <http://www.ptpc.com/community.shtml>

## Phillips Residential Property

The Phillips Residential Property is located in Tacoma, Washington. The property is a 0.14-acre parcel in a residentially zoned area of the city. The home on this site was constructed in 1908, with the



Port Townsend Paper Corporation

addition of a detached garage in 1918. Prior to renting out the property, the owner lived at this location and was melting lead on the premises. This operation occurred for a few years and continued while tenants occupied the property.

In March 2007, a family moved onto the property whose blood lead levels were tested in November 2007. The children had elevated blood lead levels [EBLL =  $10 > \mu\text{g/dl}$ ], the youngest having the highest concentration. Tacoma-Pierce County Health Department (TPCHD) notified the Washington State Department of Health—standard protocol whenever a child in Washington State has an EBLL.

Our public health goals were to assess and reduce community exposures to lead and arsenic.

The Department of Health worked closely with the Department of Ecology and the TPCHD to evaluate the health risks posed by lead and arsenic. (1) We provided a Health Consultation report and fact sheet to educate the community about potential health risks of lead exposure. (2) The TPCHD issued two health orders to the property owner, prohibiting the melting of lead at the site and preventing subsequent occupancy of the home until remediation has been completed. (3) Ecology and TPCHD contacted residents in the neighborhood asking about possible lead contamination on their properties, and leaving a fact sheet giving steps they could take to reduce potential exposures. The results of sampling in surrounding yards were relayed to the property owners. A lead-based paint inspection/risk assessment report for the Phillips Residential Property was also completed.

## Implementing Legislation

- PBDE Legislation: Finding Alternatives to Deca-BDE Treated Electronic Enclosures and Residential Upholstered Furniture

The PBDE law passed in Washington in 2007 prohibits sales within our state of products that contain the flame retardants Penta-BDE and Octa-BDE, and prohibits the sale of mattresses containing Deca-BDE. The law requires Ecology and DOH to identify safer alternatives to Deca-BDE in electronic enclosures and residential upholstered furniture, before a ban of these uses would take effect. In 2008, Ecology and DOH researched the availability and safety of alternatives to Deca-BDE chemicals in electronic enclosures

and residential upholstered furniture. This work continues under Ecology's "Persistent, Bioaccumulative Toxin (PBT) Initiative" funding.

## Children's Safe Products Act

In 2008, the Washington Legislature passed the Children's Safe Products Act, which our Governor signed into law. This law set standards (content limits) for lead, cadmium and phthalates in children's products. It also directed the Departments of Ecology and Health to identify chemicals of high concern for children's health. The law requires manufacturers to report their use of these chemicals in children's products.

The Governor created an Advisory Committee to help implement the law and appointed both Ecology and Health staffers to it. The Advisory Committee met during the summer and fall of calendar year 2008. The Departments of Ecology and Health researched and presented available information on topics for discussion—e.g., testing and reporting issues, federal pre-emption issues, car seat testing and availability, and a draft process for identifying chemicals of high concern for children. This work receives STCA funding under the Children's Safe Products Act.

## Women's diet survey-data analysis

In 2005-2006, DOH staff conducted the Women's Diet Survey (WDS). Our objective was to improve methods of collecting fish consumption data among the general public; we intended to use the data in estimating exposures to environmental contaminants from eating fish.

- We recruited eight hundred women from around the state to participate.
- We asked about their diets (via telephone) and mailed a self-administered diet questionnaire to each of them.
- We also asked participants to provide a hair sample for us to test for mercury. (Fish consumption—especially eating tuna fish—is the main pathway to mercury contamination.)

We conducted our final data analysis in 2008.

This survey was also supported, in part, by a grant from the CDC for Environmental Public Health Tracking Network development activities.

## Fish consumption advisories—

After surveying effects of exposure to contaminants in fish, we increased our outreach. Our purpose was to increase public awareness of the benefits and risks of eating fish. This outreach became the primary DOH activity funded by State Toxics Control Account money. Below are some highlights of Fiscal Year 2008 activities regarding fish consumption advisories.



DOH reviewed fish tissue data collected primarily from Ecology's Total Maximum Daily Load – TMDL and Toxics Monitoring Programs (WSTMP) to determine potential health impacts to the public. Other common sources of fish tissue data come from our state Department of Fish and Wildlife, and from the federal EPA and USGS.

- DOH updated advisories for the Duwamish River, Lake Roosevelt, and the Spokane River.
- Working collaboratively with Seattle King County Parks and Health Department personnel we're developing signs for posting around Green Lake and around Lake Washington, to educate the local public in eight different languages about safe fish consumption.
- Puget Sound Advisories were posted in the Commencement Bay waterways; in cooperation with Pierce County Health Department staff, we'll design and post additional signs for Commencement Bay.
- The Washington Department of Fish and Wildlife updated its Fishing Pamphlet to reflect updated 2008 advisories. Puget Sound Crab advice was added to the existing Puget Sound Advisory.

## outreach and education

In 2008, DOH continued to improve outreach to multiple stakeholders.

DOH launched a grocery store outreach pilot project that offered grocery stores educational materials and training for employees to aid the public in making smart fish choices at point of purchase (seafood counters and cases).

- We also included information about state recreational advisories. The guide was developed based on commercial fish monitoring conducted by our office as well as national data sources.
- Surveys at three of the pilot project stores determined the effectiveness of the materials. We expanded this pilot, testing 16 grocery stores in Washington.
- The project was highlighted in Perspectives, an award winning periodical of Health Research for Action UC Berkley in the issue Fish Contamination: Environment and Health at Risk. The guide was also highlighted in a Seattle Times article (a Q & A) about mercury and fish.

DOH continued to participate in Columbia River Toxics Reduction Strategy Meetings with various state and federal agencies, tribes, and concerned environmental and commercial interest groups. Our goal is to (i) better understand the complex issues facing the Columbia River system, to (ii) reduce toxics in the Columbia River Basin,

and to (iii) prevent further contamination. Thus far we've characterized the risk to human health and ecosystems, and identified data gaps. We will summarize these efforts in the "Columbia River Basin: The State of the River Report for Toxics" for release in 2009.

DOH participated in the Marine Resources for Future Generations (MRFFG) Community Advisory Group. The group includes two social service organizations: the Korean Women's Association (KWA), which serves the Korean, Samoan, and Filipino communities, and the Indochinese Cultural and Service Center (ICSC), which serves the Vietnamese, Cambodian, and Laotian communities. Participating government agencies include WA State Fish and Wildlife, Pierce County Health Department, the Puget Sound Partnership. Nongovernmental partners provide support and educational resources. Together we make the MRFFG a strong coalition, protecting marine resources and teaching safe fish and shellfish consumption. These efforts empower consumers to make educated decisions about managing their environmental health risks.

DOH provided support and distributed educational materials, responding to public enquiries and through health practioners—(i) WA State Obstetrical Association, (ii) DOH Maternal Infant Health, (iii) WIC, and (iv) Child Profile programs, as well as through community groups. We saw high demand for the Healthy Fish Guide both statewide and nationally.

## Fish consumption guidance: Technical protocol

To ensure that development of fish consumption advisories occur in a consistent, scientifically defensible, and open process, DOH developed draft guidelines. Using them will reduce the amount of time required to evaluate fish tissue data and determine whether to issue a fish consumption advisory. We reviewed the draft and will ask federal, state, tribal, and local agencies for comment on them.

## Oregon Human Health Focus Group

DOH staff assisted the Oregon Department of Environmental Quality (DEQ) to define their proposed revisions to Sections 303(d) and 305(b) of the federal Clean Water Act. The revisions will ultimately affect Water Quality Improvement Projects (Total Maximum Daily Load—TMDLs), the key tool in our work to clean up polluted waters.



- The Oregon Fish and Shellfish Consumption Rate Project (FCR) is a collaborative effort of the DEQ, the Environmental Protection Agency (EPA), and the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) to review Oregon's fish consumption rate (one variable used to calculate water quality criteria that are protective of human health).
- Oregon established a Human Health Focus Group (HHFG) of experts in toxicology, risk assessment, public health, biostatistics, and/or epidemiology. Washington's DOH participates in the HHFG to advise DEQ about human health issues related to this project. The HHFG focuses only on the science, and not on the policy components of the issues they discussed. Revisions to the fish consumption rate will ultimately affect the numerical standards used to determine compliance with the federal Clean Water Act.

Nearly 14 months involvement resulted in a report titled Human Health Focus Group Report: Oregon Fish and Shellfish Consumption Rate Project. Based on the HHFG's efforts, Oregon's Environmental Quality Council put forth a new consumption rate of 175 grams per day, a ten-fold increase from Oregon's former rate.

## Columbia River Toxics Reduction

Two DOH staff members participated in steering committees and work groups for the Columbia River Basin: State of the River Report. DOH participated in the Columbia River Toxics Reduction Strategy meetings and workgroups, and served on the Steering Committee. Our work involved problem formulation that establishes the goals, breadth, and focus of an assessment. It also establishes the ecological/human-health/cultural values to be protected.

This step describes the existing and potential exposure pathways and effects. As part of problem formulation, we developed a conceptual model that describes the relationship between exposure and effects.

- Problem formulation culminates in agreements on what contaminant(s) we'll assess, how to identify exposure pathways, and main questions to be answered (e.g., conditions, trends, data gaps, etc.). These agreements will also describe the approach, types of data, analytical tools to be used, and how the data will be interpreted.

## Perchlorate\*

\*Perchlorates are derived from perchloric acid ( $\text{HClO}_4$ ) salts. They occur both naturally and through manufacturing processes. Most perchlorate salts are soluble in water.

OEHA staff offered comments about the EPA's Preliminary Regulatory Determination for Perchlorate (in accordance with the federal Safe Drinking Water Act) action notice. We determined that publishing a "national primary drinking water regulation for perchlorate" would not present "a meaningful opportunity for health risk reduction for persons served by public water systems." After considering public comments and information provided during the 30-day comment period ending in November, 2008, the EPA intended to publish its final regulatory determination in December 2008--providing state and local public health officials with technical information they can use to address local perchlorate contamination.

- DOH concluded that EPA's decision not to regulate perchlorate was in error and that uncertainties about perchlorate toxicity, exposure rates / tolerances of presence in the environment, required that regulators take a cautious approach to protecting sensitive populations.
- We concluded that EPA's health reference level would not adequately protect the health of sensitive subpopulations, and the EPA's determination that regulation of perchlorate in drinking water would provide a meaningful opportunity for risk reduction, was not supported.
- Perchlorates have been used for more than 50 years to treat thyroid gland disorders.
- Perchlorates are used as an oxidizer in rocket fuel and explosives—they're found in airbags and fireworks. Both potassium perchlorate ( $\text{KClO}_4$ ) and ammonium perchlorate ( $\text{NH}_4\text{ClO}_4$ ) are used extensively within the pyrotechnics industry, and ammonium perchlorate is also a component of solid rocket fuel.
- Lithium perchlorate decomposes exothermically, giving off oxygen; it is used in oxygen "candles" on spacecraft, submarines, and in other esoteric situations that require a reliable backup or supplementary oxygen supply.

## Department of Revenue– Chapter 82.21 RCW– Hazardous Substance Tax

### Administration

The Department of Revenue oversees the collection of the Hazardous Substance Tax. The Department of Ecology evaluates and determines which substance types are subject to the tax. Firms that produce store or distribute taxable hazardous substances report the tax as part of their Combined Excise Tax Returns.

### History

The hazardous substance tax resulted when Washington voters passed Initiative 97, in November 1988; the tax took effect March 1, 1989. An earlier, similar tax, levied since January 1, 1988 at a rate of 0.8 percent, did not apply to petroleum products destined for export from our state. Under the Model Toxics Control Act we collect more revenues, despite the lower (0.7 percent) rate, because the Hazardous Substance Tax now applies to intended exports.

### Tax Base

The tax applies to the wholesale value of certain substances –those either defined by statute as “hazardous” or determined by the Department of Ecology (Ecology) to cause a threat to human health or the environment. The law imposes a privilege tax on the first possession within our state of those substances. The tax applies primarily to petroleum products, then to pesticides, and to certain listed chemicals. Ecology identified/defined more than 8,000 different substances currently subject to the tax.

### **Tax Rate: 0.7 percent Levied by the State of Washington**

For Fiscal Year 2008:

- The State Toxics Control Account received \$61.2 million.
- The Local Toxics Control Account received \$69.0 million.

**Table 9: Department of Revenue Collections by fiscal Year**

Fiscal Year	Collections*	% Change	State Taxes
2008	\$130,190,000	16.6%	0.8%
2007	\$111,701,000	19.0	0.7
2006	90,810,000	12.2	0.6
2005	80,929,000	17.4	0.6
2004	68,921,000	35.9	0.5
2003	50,721,000	12.3	0.4
2002	45,172,000	(37.7)	0.4
2001	72,455,000	46.5	0.6
2000	49,472,000	50.1	0.4
1999	32,966,000	(24.0)	0.3
1998	43,398,000	(14.2)	0.4

\*Includes receipts for both the State and the Local Toxics Control Accounts.

### Exemptions, Deductions, Credits

- Exempt: Previously taxed hazardous substances (limits the tax to first possessor).
- Products purchased/imported for personal or domestic use—not for business purposes.
- Minimal amounts of hazardous substances (apart from petroleum products or pesticides) in the possession of retailers.
- Alumina or natural gas.
- Persons/activities exempted\* from such tax by our federal (U.S.) Constitution.
- Products already present within our state before March 1, 1989 (effective date of the Model Toxics Control Act).
- Credit: Credit for taxes paid on fuel exports from our state, in vehicle fuel tanks.

Credit for the amount of similar taxes paid on the substance in another state.

## Distribution of Model Toxics Control Accounts funds

defined by RCW 70.105D.070

- Ecology receives an allocation of 47.1 percent of the total tax receipts into the State Toxics Control Account to pay for hazardous waste sites cleanup and related planning and regulation activities.
- The amount of 51.9 percent of the total Hazardous Substance Tax revenues goes into the Local Toxics Control Account for disbursement by Ecology in the form of grants or loans, to bolster local municipal governments' hazardous waste control programs.
- And one percent of the total receipts from both Toxics Control Accounts fund Public Participation Grants to promote meaningful public involvement in hazardous waste cleanup projects and waste reduction campaigns.

## Puget Sound Partnership

### PSP charged with cleanup duty

In 2007, the Washington State Legislature created the Puget Sound Partnership (the PSP replaced the PSAT), a new state agency charged with overseeing the cleanup of Puget Sound. Given this charge, during Fiscal Year 2008 the Partnership implemented the LID Stormwater Program developed in 2005-2006, as it completed the following activities:

1. The Partnership completed approximately 50% of the 2008 LID Local Regulation Assistance Project. We provided free technical assistance (through a private consultant) to competitively selected cities, towns, and counties, to help them integrate LID into their land development codes and their stormwater management standards.

The 2008 project assisted 13 cities, towns, and counties located in the Puget Sound basin. Following intensive technical assistance, participating local governments received detailed, ready-to-adopt revisions to their existing codes, new draft code chapters, engineering drawings and maintenance recommendations, among other needed information.

2. The Partnership entered an interagency agreement with the Washington State University (WSU) Pierce County Extension, to develop and carry out a new series of four technical LID classes in four different regions of Puget Sound (16 two-day classes, in total).

WSU developed a new curriculum for the classes, and hired a class coordinator, who scheduled speakers, registered students, and held one set of four classes in Sequim. Favorable evaluations of the class series led to planning subsequent classes in Bellingham, Lacey, and Seattle during Fiscal Year 2009.

3. The Partnership offered a limited number of scholarships to tribal groups, non-profit organizations' and student

body members—thanks to an interagency agreement with the University of Washington (UW) for providing the course—to participate in an LID short course.

4. The Partnership provided scholarships to local conservation district planners and engineers, enabling them to attend WSU's technical LID class series, through an interagency agreement with the Washington Conservation Commission.
5. The Partnership reprinted 1,000 copies of the Low Impact Development Technical Guidance Manual for Puget Sound (the region's technical guidance on LID) and distributed them.

### Stormwater in the mix

Managing stormwater runoff is crucial to restoring Puget Sound. In addition to encouraging Low Impact Development (LID), local governments should improve stormwater management:

- Retain 65 percent of the forest cover, and allow construction of no more than 10 percent impervious area outside of Urban Growth Boundaries
- Allow zero stormwater discharge for all sites—up to a 2-year storm
- Mandate the retrofitting of existing developed areas for treatment and flow control

Puget Sound's water quality and environmental health would benefit from stricter stormwater controls, and LID could help local authorities meet those restrictions. The PSP carries the duty and holds the platform to broadcast treatments for the ills that stormwater visits on Puget Sound's health.

Local governments look to PSP for guidance/direction on ways to save Puget Sound.

## Actions for Puget Sound

2006, the Puget Sound Action Team (PSAT) published its report analyzing how well past participants of the “Low Impact Development” (LID) Local Regulation Assistance Project had adopted and applied our recommendations.

We hoped to remove local regulatory barriers to using LID practices and to encourage use of those practices within local jurisdictions. The report described the effectiveness of the assistance effort to that date:

- i. progress of the participant-jurisdictions,
- ii. barriers to further progress, and
- iii. suggested improvements to the assistance we provided.

See our website, [www.psp.wa.gov](http://www.psp.wa.gov) under “Documents,” for report details.

Art Castle, executive vice president of the Homebuilders Association of Kitsap County – and workshop participant – found the (LID technical planning) classes valuable:

“This is an outstanding series of low impact development workshops. I would encourage all with a technical interest in LID to attend – especially public and private sector engineers. The workshops are inexpensive and have outstanding information.”

“On behalf of the city of Lake Stevens, I would like to express my great appreciation to the Partnership and AHBL, Inc for allowing us the opportunity to be part of such an exceptional program. We look forward to receiving your recommendations and to see what others have done. This process has been a wonderful experience and we look forward to sharing [it] with others in the near future. Thank you again for all of your dedication.” --Shane Oden, Public Works Project Engineer, City of Lake Stevens

## Washington State Parks

### Puget Sound - Hood Canal Cleanup

#### Identified problems

Hood Canal and other Puget Sound ecosystems face a serious chain of problems:

- Toxic pollutants—wastes created by human activities on surrounding shores—
- washed into the water bodies and settled on the bottom,
- removing available oxygen and smothering benthic plants and animals.
- Bottom-feeders worked those toxins into the food chain—
- the toxins built up in fatty tissues of the “feeder stock”
- eaten by larger fish and fish-eating mammals—including humans—
- ultimately threatening the entire ecosystem.

#### Investing in solutions

Our Governor and Legislature set a high priority on improving water quality in Puget Sound and the Hood Canal. We invested nearly half a million dollars during Fiscal Year 2007 in Washington State Parks cleanup projects.

During Fiscal Year 2008, the Department of Parks expended about \$27,731 from the State Toxics Control Account, paying the residual bills from the clean water projects begun during Fiscal Year 2007.

#### Learn more on line

For detailed information, visit: <http://www.parks.wa.gov/cleanwaterprojects/>



## University of Washington (UW)

### Demolition of More Hall Annex – Seattle

During Fiscal Year 2007, the UW decommissioned its nuclear research reactor, housed in the More Hall Annex. The University had planned to demolish the building and landscape the area after the reactor license terminated during Fiscal Year 2008.

Because people consider More Hall Annex a building with historical value on the UW campus, circulation of a public petition to preserve the building halted the demolition.

In Fiscal Year 2008, the University expended \$41,893 from State Toxics Control Account funds to pay residual bills of the decommissioning process (incurred last year). Added to the State of Washington Heritage Register, More Hall Annex sits empty now.

### The University of Washington – Tacoma

#### Background

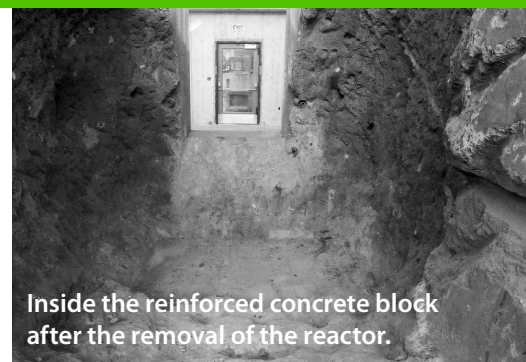
The University of Washington purchased property in down town Tacoma to site a branch campus. This location was chosen to make higher education more accessible to people living and working in the region south of the original Seattle metropolitan area campus.

Most of the soil and groundwater destined to hold the University of Washington-Tacoma (UWT) was contaminated by previous business practices and hazardous waste storage. Remedial Investigations, feasibility studies, and cleanup actions performed at UWT included :

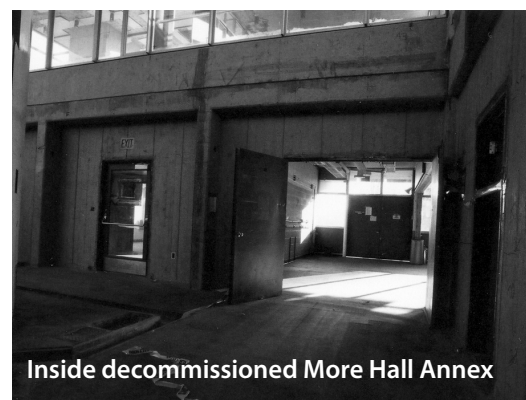
- Underground Storage Tank Removals;
- Grading, Excavation, and Clearing;
- Sewage Disposal;
- Controlled Demolition of Structures Containing Asbestos; and
- Appropriate Removal and Disposal of Debris and Contaminated Soils.



The More Hall Annex was built during the 1960s, originally named “Nuclear Reactor Building”. The name was changed to “More Hall Annex” at the direction of the US Nuclear Regulatory Commission, following the 9/11/2001 attacks, to avoid drawing attention to the reactor. The building’s exterior looks the same today as it did in the 1960s.



Inside the reinforced concrete block after the removal of the reactor.



Inside decommissioned More Hall Annex

#### Leveraged funding

The legislature appropriated Model Toxics Control Accounts dollars to the University of Washington to help the Tacoma Branch Campus qualify for “Brownfields” (toxics clean-up and redevelopment) funding from the federal Environmental Protection Agency. [See page 11]

#### Social and economic benefits

The decision to site the UWT downtown—rather than in an outlying area of the city—is cited as a most important factor in the city’s urban renewal. The choice to renovate some of Tacoma’s oldest remaining industrial structures for campus classrooms and offices, instead of razing the buildings and constructing new ones, has since been heralded for its foresight.

A former cluster of blighted decaying buildings was given new life. The first campus site was the Perkins Building at 1900 Commerce Street. The campus library formerly served as Snoqualmie Falls Power Company’s transformer house. Building names such as Mattress Factory and West Coast Grocery recall the structures’ earlier uses.

## Next steps

Immediate plans for UWT included increasing enrollment (at about 4,000 students last year), and renovating additional buildings within the campus footprint.

### The Cragle parcel—

- Waste Oil underground storage tanks (three USTs) [19,500 gallons, 19,500 gallons, and 15,500 gallons]
- Storm Sewer; Waste Storage area
- Petroleum-contaminated soil treatment area
- Above ground (surface) Storage Tanks
- Diesel Fuel USTs [two USTs, 2,500 gallons each]
- Gasoline UST [2,500 gallons]
- Two more Underground Storage Tanks {1,000 gallons, and 500 gallons capacity}
- The Schaub-Ellison parcel—
- Lube pits and floor drain
- Retreading dust collection system and contaminated soil at Loading Dock
- Four USTs [1,000 gallons, 8,000 gallons, 500 gallons, and 500 gallons capacity]

- The four Power Stations—
- Waste Storage area
- Heating Oil UST
- Gasoline UST
- 950 gallon UST capacity

### Bleckert parcel—

- Sink
- 500 gallons Heating Oil UST

### Jet Parking—

- Petroleum-contaminated soil treatment area
- 500 gallon capacity UST

### Howe parcel—

- Cistern
- Subsurface pipe

### Williams Oil Filter —

- Used batteries
- 1,800 gallon Heating Oil UST

### Others—

- Jefferson Street Association (Potential USTs)
- Office Furniture Discount (575 gallon Heating Oil UST)

## Washington State Patrol



Washington State Fire Academy, North Bend

The State Patrol Fire Protection Bureau's mission is to provide the means for firefighters to receive live-fire training that meets or exceeds the minimum standards required by federal and state regulations. Additionally, we offer firefighters access to the technical knowledge and skills practice needed to recognize and contain hazardous material incidents which threaten our human safety and environmental health. The training equips firefighters to reduce hazards risk, both for people and their property. During Fiscal Year 2008, the Fire

Protection Bureau—a division of the Washington State Patrol—expended \$209,963 from the State Toxics Control Account, delivering live fire training in several areas:

## Waste Management

Funds from the State Toxics Control Account paid for the removal, transportation and disposal of hazardous waste products resulting from live fire training, and for the treatment of water contaminated by the training exercises.

## Hazardous Materials Handling

The Hazardous Materials Training program included both academic and hands-on training for first responders, to fulfill current requirements imposed by:

- Washington Industrial Safety and Health Act,
- Occupational Safety and Health Administration,
- Department of Transportation and
- National Fire Protection Association.

In addition, the training offers practical experience for those personnel who respond to clandestine drug labs, acts of terrorism, weapons of mass destruction threats,

confined space rescue, hazardous substance spills, and to risks relating to the transport of hazardous chemicals and waste.

## Required Training —

We face a significant need for specialized hazardous materials training in our state. The Washington Industrial Safety and Health Act mandates standardized initial training, and regular retraining for our emergency responders.

As common practices and consumer products change, so too must the training we provide. For example, the auto industry manufactures electrically-powered vehicles, as well as automobiles powered by ethanol, diesel, gasoline or bio-fuel blends, and by hydrogen fuels. A first responder dispatched to a motor vehicle accident must know how to protect the people involved—and the responders themselves—from exposure to contaminant leaks, to fire or explosion burns, from smoke or fumes inhalation. To protect the environment from immediate and long-term damage, the responder must know how the power trains will react to collision pressures; the responder must choose the correct suppressant (water, foam, dirt); the responder must know how to contain hazardous liquids, etc. —The responder must know how to neutralize the threats and then clean up the surrounding property.

## Flammable Liquids -I

Participants receive basic information needed to identify and control various flammable liquid emergencies. Instruction includes the fire properties, fire behavior of flammable liquids, and the affects of available fire extinguishing agents, firefighter safety, as well as, environmental concerns. Students practice extinguishing live flammable liquid fires. In addition, students learn proper foam application techniques for controlling and extinguishing flammable liquid fires, which can devastate both human life and the environment.

## Flammable Liquids-II (Pressurized Gases)

Participants learn the basic property of liquid petroleum gas (LPG), and of LPG-powered vehicle fuel systems; of storage tanks and their built-in safety features; of LPG leak detection, product identification, and basic tactics for handling emergencies. Students practice attacking, controlling, and recovering liquid petroleum gas fires on a simulated storage tanks and a fill station. Students gain experience in fire ground tactics using standard stored pressure water extinguishers, stored pressure foam extinguishers, cartridge-operated dry chemical extinguishers, and carbon dioxide extinguishers.

## Magnesium and Ethanol Fuels

The Fire Training Academy conducted a series of tests on June 20, 2008, using foam from various manufacturers to extinguish magnesium and ethanol fuel fires. From the tests, firefighters learned to extinguish an ethanol fire with foam required a certain foam application technique. In addition, they learned that conventional firefighting techniques cannot be used to control ethanol fires: (1) ethanol fires burn with almost no flame visible, and (2) foam application rates matter as much as the equipment used in firefighting operations.

## Airport Rescue Firefighting

We constructed this unique training prop to provide hands-on live firefighting training for aircraft incidents. Training includes characteristics of jet fuel and avionics. This training experience enhances the safety of all flight operations in to and out of airports of our state.

## Marine Firefighting

This program is designed to include academic and live hands-on firefighting for those personnel working within the marine industry. Training includes fire suppression methods and spill control techniques. The training is designed to meet the current Code of Federal Regulations, and requirements imposed by the National Fire Protection Association and the International Maritime Organization.



**Magnesium  
Live Fire  
Training**

**Ethanol Live  
Fire Training**





## Part 2: LOCAL TOXICS CONTROL ACCOUNT

Washington’s State Department of Revenue oversees Collection of the Hazardous Substance Tax. Revenues deposited to the Local Toxics Control Account come exclusively from Hazardous Substance Tax Collections. Fiscal Year 2008 transactions included:

Local Toxics Control Account Revenue – F Y 2008	
53% of Hazardous Substance Tax Funds	72,139,279
Treasurer Transfer to Non-agency Account	-1,034,000
<b>Ecology Total LTCA Revenue</b>	<b>\$71,105,279</b>

**State law RCW 70.105D.070(3)(a) charges the Department of Ecology with responsibility to distribute funds from the Local Toxics Control Account**—as grants and loans to local governments—to support the following kinds of toxics control projects:

- Remedial actions.
- Hazardous waste [management] plans and programs.
- Solid waste [reduction and recycling] plans and programs.
- Assessment and cleanup of methamphetamine manufacturing facilities.
- Abandoned and derelict vessels cleanup/disposal.

**Table 10: Expenditures- Ecology Local Toxics Control Account – Fiscal Year 2008**

Ecology Programs’ Expenditures	LTCA Dollars	% LTCA Spending
Toxics Cleanup Program	719,736	1.5%
Hazardous Waste & Toxics Reduction Program	406,483	1%
Agency Administration, Facility, & Related Costs	444,679	1%
Solid Waste & Financial Assistance Program	1,935,707	4%
Water Quality Program	1,706,102	3.5%
Capital Program	42,188,959	89%
Total Ecology LTCA Expenditures	\$47,401,666	100%



### Lower Duwamish Waterway source tracing

This picture shows TCP’s Dan Cargill (left) and Beth Schmoyer (right) from Seattle Public Utilities, collecting samples at a site on the Lower Duwamish Waterway for source tracing. Ecology leads the Source Control efforts on the Lower Duwamish Waterway. Source Control is the process of stopping or reducing releases of pollution to the waterway. Source tracing involves following the contamination from its discharge point, up pipe(s), and testing samples to verify the source. See “Local Source Control Partnership Efforts” (on page 65) for details.



## Local Waste Management Funding Programs

**The Local Toxics Control Account primarily provides grants to local governments. Most of the grants help communities pay for hazardous waste site cleanups. LTCA funding also supports waste reduction education, recycling systems design, and waste management planning.**

**Remedial Action Grants or Loans** help local governments investigate and clean up publicly-owned lands contaminated with hazardous substances. See pages 52-53.

**Coordinated Prevention Grants** help recipient local governments plan and conduct programs that promote waste reduction, materials recycling and repurposing, organics diversion, and green building practices. Governments use the funds building infrastructure and encouraging residents and business managers to avoid wasteful behaviors. These local programs reduce toxic threats by increasing awareness of, and providing convenient access to, healthy choices- and the means to safely comply with waste handling laws. See pages 54-59.

During Fiscal Year 2008, more than \$85,000,000 reached Washington communities in the form of grants or loans.

**Public Participation Grants (PPG) help successful applicants become local environmental leaders.**

The PPG program has three unique characteristics:

1. These grants are not available to Government entities, to meet their responsibilities.
2. These grants are funded by both the STATE and the LOCAL Toxics Control Accounts.

The Model Toxics Control Act specifically sets aside an amount equal to one percent of both the State and the Local Toxics Control Accounts' revenues, to reimburse certain PPG project costs.

- (i) PPG reimbursement bolsters public (i.e., non-government/not-for-profit entities') participation, so affected interests can influence Ecology's decisions about the stages of site cleanup.
  - (ii) PPG funding reimburses certain costs of conducting environmental education projects designed to persuade participants to adopt earth-friendly/sustainable habits and practices.
  - (iii) PPG funding bolsters business sector sustainability and peer-to-peer waste reduction/avoidance waste training campaigns.
3. PPG funding is not an entitlement—applicants compete for reimbursement of defined costs. Application scores and ranking are based upon their plans to fulfill published criteria. See pages 60-63



## Whatcom Waterway

**Whatcom Waterway – the largest and costliest of the 12 Bellingham Bay cleanup sites.**

The Whatcom Waterway site, about 700 acres within Bellingham Bay, includes mercury contaminated sediment. For nearly six decades, Georgia Pacific (G-P) operated a pulp and paper mill on the shore, near the Port of Bellingham. The G-P complex used mercury at its chlor-alkali plant from 1965 to 1979, in its wood fiber bleaching and pulping processes.

The plant discharged mercury-contaminated wastewater into Bellingham Bay between the years of 1965 and 1971. But from 1971 through 1979, a wastewater pretreatment system reduced mercury concentrations in the discharge. G-P halted all direct wastewater discharges from the chlor-alkali plant in 1979, upon completing construction of an industrial waste lagoon, called an aerated stabilization basin (ASB). The ASB provided secondary treatment of the mill's wastewater, so the mill could comply with the federal Clean Water Act.

In 2001, Georgia-Pacific closed its mill complex, permanently. Under Ecology oversight, G-P completed an interim cleanup action—also in 2001—a combined sediment cleanup/habitat restoration project, in the former log [storage] pond portion of the site.

In 2005, the Port of Bellingham bought 137 acres of waterfront property from Georgia-Pacific –including property within the Whatcom Waterway site. By that purchase, the Port became one of four parties legally responsible for conducting site cleanup, under Ecology's regulatory oversight. Other liable parties were (i) the city of Bellingham, (ii) the Washington Department of Natural Resources, and (iii) a commercial enterprise, "Meridian-Pacific, LLC".

On September 20, 2007 Ecology finalized a Consent Decree with the Whatcom Waterway cleanup site's liable parties. This legal agreement describes what actions the liable parties must take to cleanup historic contamination at the Whatcom Waterway site—the removal and disposal (or containment) of toxic pollutants, the limit on allowed residual contamination concentrations, and the protections against re-contamination—to settle their joint liability.

Ecology's selected cleanup actions for the site include:

1. Removal—  
dig, haul, and dispose—of more than 500,000 cubic yards of contaminated sludge and sediment,
2. Capping—  
cover stabilized contaminated soil with an impermeable surface—in some areas of the site, and
3. Monitoring—  
test soil and water samples, to verify the long-term effectiveness of the cleanup action.

We estimate that completing the cleanup project's engineering design, permitting, and construction, will cost more than \$44 million and six years' effort.

The Port of Bellingham, under Ecology oversight, will compile results of a field investigation performed during summer and fall 2008. In response to the complete investigation report, Ecology will publish a report providing an engineering design and both monitoring and contingency plans' details, for public review. We expect to publish our report early in 2010.

See article on page 15.

## Remedial Action Grants

**The legislature appropriates Local Toxics Control Account funding to Ecology for a two-year period. During the period from July 1, 2007 through June 30, 2008 the legislature appropriated approximately \$92.685 million to the Department of Ecology for distribution to local governments as loans or grants for the investigation and cleanup of publicly owned contaminated sites. Ecology awarded \$60.788 million in RA Grants during Fiscal Year 2008.**

### Categories of Remedial Action Grants

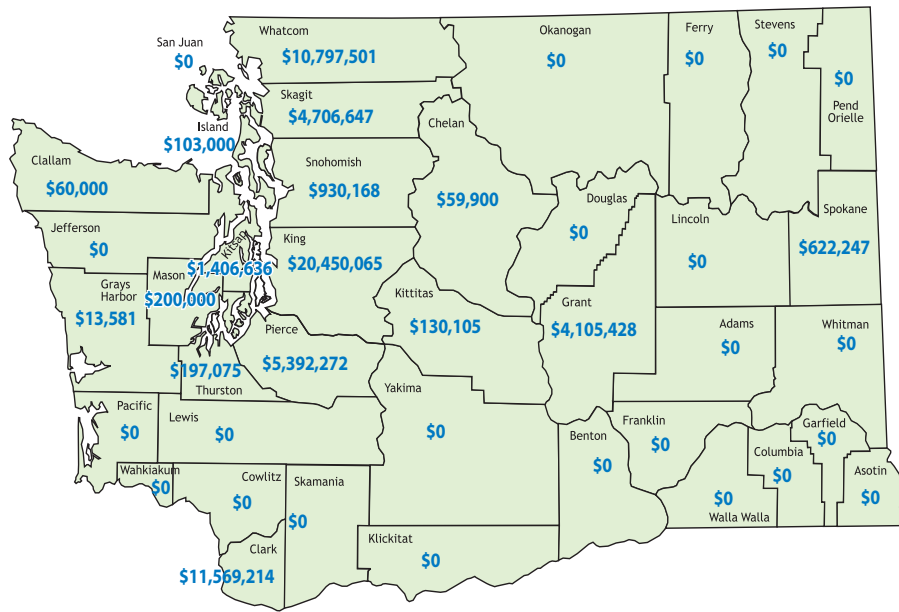
When local governments need to clean up contaminated sites, the Department of Ecology offers remedial action grants to encourage and expedite cleanup activity. These grants lessen the cleanup cost burden on local governments (for their rate payers and taxpayers).

The kinds of local government projects typically funded through RA Grants awards include:

- **Oversight Remedial Actions:** These grants help fund local governments' investigation and cleanup of publicly owned land.
- **Site Hazard Assessment:** These grants help local health departments or districts pay the costs to assess the scope/degree of contamination at a suspected hazardous waste site (located within the local health jurisdiction).
- **Integrated Planning:** These grants enable local governments to develop integrated project plans for contaminated site cleanup and property reuse.
- **Safe Drinking Water Actions:** These grants provide financial assistance to a local government, applying on behalf of a purveyor of safe drinking water, to an areas where a hazardous substance contaminated the local supply / source.
- **Area-Wide Ground Water Contamination:** These grants help finance assistance to local governments seeking to clean up and redevelop property within the local government's jurisdiction. Generally, these grants fund ground water cleanups where hazardous substances from multiple sources. The local government need not own the property to obtain this type of grant.
- **Independent Remedial Actions:** These grants offset some of the costs where a local government conducted a voluntary cleanup under Ecology's Voluntary Cleanup Program. Funds for conducting independent cleanups cap at \$300,000.
- **Methamphetamine Labs:** This category helps fund local government's initial investigation and assessment of suspected methamphetamine laboratories, and pay for oversight of the cleanup activities within the local jurisdiction. [Compare with State Toxics Control funding to Ecology's "Spill Prevention, Preparedness and Response Program" role, and to the Department of Health's "Clandestine Drug Lab" program.]
- **Derelict Ships:** Ecology makes funding available to local governments to remove and dispose of hazardous substances from derelict or abandoned vessels.

See Figure 13 for the distribution of awards by category of remedial action grant.

See Table 11 (below) for a list of awards granted in Fiscal Year 2008.

**Figure 13: Remedial Action Grant/Loan Awards for Fiscal Year 2008****Table 11: Remedial Action Grants-Fiscal Year 2008**

Remedial Action Grants - Fiscal Year 2008				
RECIPIENT	COUNTY	GRANT or LOAN No.	PROJECT TOTAL	LTCA FUNDING
<b>Oversight Remedial Action</b>				
Port of Ridgefield - Former Pacific Wood	Clark	G0800016	10,248,960	6,661,824
Port of Ridgefield - Former Pacific Wood	Clark	L0800002	10,248,960	3,587,136
King County - Denny Way CSO	King	G0800503	2,920,000	1,460,000
King County - Lower Duwamish Waterway	King	G0800508	1,395,000	697,500
Seattle, Port of Lower Duwamish Waterway	King	G0800557	7,477,750	3,738,875
Seattle Public Utilities - Lower Duwamish Waterway	King	G0800558	2,861,738	1,430,869
Seattle City Light - Lower Duwamish Waterway	King	G0800584	4,921,192	2,460,596
City of Bremerton-Former Chevron Property	Kitsap	G0800507	1,569,000	1,176,750
City of Shelton - Goose Lake Integrated Planning	Mason	G0800504	200,000	200,000
Port of Anacortes - Cap Sante Marine	Skagit	G0800048	5,297,446	2,648,723
Port of Anacortes - Dakota Creek Industries	Skagit	G0900012	4,016,500	2,008,250
Spokane County - Colbert Landfill	Spokane	G0800537	133,300	66,650
<b>Oversight Subtotal</b>				<b>26,137,173</b>
<b>Amendments to Previous Years Grants</b>				<b>16,092,877</b>
Port of Vancouver - Swan Manufacturing	Clark	G0600237		1,017,544
Grant County - Ephrata Landfill Site	Grant	G0700293		4,150,428
Port of Grays Harbor - Hungry Whale Site	Grays Harbor	G0700258		13,581
Seattle, City of - Gas Works Park	King	G0500131		11,324
Kitsap County Public Works- Hansville Landfill	Kitsap	G0600048		58,250
Port of Anacortes - Scott Paper	Skagit	G0300134		6,674
Port of Olympia - Cascade Pole	Thurston	G0600051		185,075
Port of Bellingham - Central Waterfront	Whatcom	G0700058		150,000
Port of Bellingham - Whatcom Waterway	Whatcom	G0700287		10,500,001
<b>Oversight Remedial Action Total</b>				<b>42,230,050</b>



**Local Common Cleanup**

City of Ellensburg - Third & Mail Street	Kittitas	G0800338	175,070	130,105
Orting School District	Pierce	G0800259	400,000	200,000
Puyallup, City of - Pioneer Park Activity Center	Pierce	G0800538	312,204	156,102
City of Arlington	Snohomish	G0800339	400,000	200,000
Lake Stevens School District #4	Snohomish	G0800392	16,336	8,168
Snohomish County- Paine Field Pistol Range	Snohomish	G0800461	400,000	200,000
Snohomish County- Jarvis/Waterman Properties	Snohomish	G0800506	400,000	200,000
Spokane Public Facilities District	Spokane	G0800465	400,000	200,000
Spokane County Public Works				
- Stockland Livestock Exchange	Spokane	G0800621	301,193	150,597
<b>Local Common Cleanup Total</b>				<b>1,444,972</b>

**Retroactive**

Seattle, Port of - Pacific Sound Resources	King	G0800364	9,916,584	3,351,805
Seattle, Port of - Harbor Island	King	G0800365	13,187,700	4,457,443
Seattle City Light - Strandley Manning	King	G0800366	2,003,684	677,245
Tacoma, City of - Thea Foss	Pierce	G0800363	9,004,703	3,044,490
<b>Retroactive Total</b>				<b>11,530,983</b>

**Site Hazard Assessment(SHA)**

Chelan-Douglas Health District	Chelan-Douglas	G0800035	59,900	50,325
Clallam County Department of Health	Clallam	G0800027	45,000	45,000
Clark County Health Department	Clark	G0800026	275,339	275,339
Island County Public Health	Island	G0800524	93,000	93,000
Seattle & King County Public Health	King	G0800117	243,979	243,979
Kitsap County Health District	Kitsap	G0800286	159,092	159,092
Tacoma-Pierce County Health Department	Pierce	G0800030	726,500	726,500
Skagit County Public Health Department	Skagit	G0800372	34,000	34,000
Snohomish County Health District	Snohomish	G0800025	188,000	188,000
Spokane Regional Health District	Spokane	G0800031	140,000	140,000
Whatcom County Health Department	Whatcom	G0800036	125,500	125,500
<b>Subtotal</b>				<b>2,080,735</b>

**Amendments to Previous Years Grants**

				285,391
Public Health Seattle King County	King	G0800034		243,980
Public Health Seattle King County	King	G0600101		4,411
Spokane Regional Health District	Spokane	G0400114		25,000
Thurston County Health and Social Services	Thurston	G0600074		12,000
<b>Site Hazard Assessment Total</b>				<b>2,366,126</b>

**Tacoma Smelter Plume**

Seattle & King County Public Health	King	G0800034	1,424,541	1,424,541
<b>Subtotal</b>				<b>1,424,541</b>

**Amendments to Previous Years Grants**

				<b>948,930</b>
Tacoma-Pierce County Health Department	Pierce	G0100077		948,930
<b>Tacoma Smelter Plume Total</b>				<b>2,373,471</b>

**Drug Lab**

Chelan-Douglas Health District	Chelan-Douglas	G0800035	9,575	9,575
Clallam County Department of Health	Clallam	G0800027	15,000	15,000
Clark County Health Department	Clark	G0800026	27,371	27,371
Island County Public Health	Island	G0800524	10,000	10,000
Seattle & King County Public Health	King	G0800117	247,500	247,500
Kitsap County Health District	Kitsap	G0800286	12,544	12,544
Tacoma-Pierce County Health Department	Pierce	G0800030	316,250	316,250
Skagit County Public Health Department	Skagit	G0800372	9,000	9,000
Snohomish County Health District	Snohomish	G0800025	134,000	134,000
Spokane Regional Health District	Spokane	G0800031	40,000	40,000
Whatcom County Health Department	Whatcom	G0800036	22,000	22,000
<b>Drug Lab Total</b>				<b>843,240</b>

<b>Total for Remedial Action Grants - FY 2008</b>	<b>Total</b>			<b>60,788,843</b>
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The Cap Sante Marine Site shoreline post remedial action. Environmental cleanup lead the way for shoreline enhancement measures and increased public access.



The Cap Sante Marine Site shoreline before remedial action.

"Each year, Ecology provides millions of dollars in grants to local governments to help pay for the cost of site cleanup. Ecology also provides Public Participation Grants to local groups affected by contaminated sites, as described on pages 60-63.

## Coordinated Prevention Grants

**The Coordinated Prevention Grant (CPG) program helps protect human health and the environment by (i) reducing/preventing exposures to toxins, (ii) reducing/avoiding waste generation, and (iii) ensuring proper management of solid and household hazardous wastes. CPG offers funding assistance to local governments for their planning and implementation of local solid and hazardous waste management plans.**

### CPG Benefits to Washingtonians:

- Reduced Toxic Threats and Hazardous Wastes. CPG projects protected human health by showing residents and businesses how to choose/use less toxic products and how to safely dispose of hazardous wastes. Facilities and recycling events collected nearly 15,000 tons of hazardous waste for proper and safe disposal.
- Ensured Safe Waste Management. Twenty percent of CPG awards pay for inspecting solid waste collection/handling/disposal facilities and enforcing solid waste facility rules. Local government staff oversaw 700 facilities, including landfill and composting operations. During the past grant period, local government staff (i) performed 3,168 inspections, (ii) responded to more than 12,258 illegal dumping or illegal storage complaints, and (iii) answered 26,933 consumer and general technical assistance requests.
- Increased Recycling Rate. Local recycling programs are the key to Washington's high recycling rate. These programs recycled or reused four million tons of used materials. CPG 2008 projects also promoted community recycling, including new efforts to recycle 154,377 tons of recyclables and organic material.
- Conserved Natural Resources. CPG funding conserved energy and resources through recycling, composting, and green building campaigns, by promoting less toxic alternatives to consumer products, and by supporting similar initiatives consistent with our Beyond Waste plan (the state's 30-year solid and hazardous waste management plan). CPG recycling programs saved the equivalent of 430,879 barrels of oil—like removing 36,596 passenger cars from the roadway.\*
- Cuts in greenhouse gas emissions. Recycling and composting programs reduced greenhouse gas emissions by 116,112 metric tons of carbon equivalent.\*

\* According to the EPA's WARM model –which calculates emissions reductions and energy savings, based on measures of alternatives to refuse/discards landfill-dumping.

## Ecology's CPG awards to Local Government focused support on—

**Organics:** Local governments helped communities reduce their waste of organic materials. Many local governments built regional composting facilities, set up commercial and residential food waste collection programs, and offered yard-waste chipping options. They pursued partnerships to offer mulching lawn mower discounts, and to produce guidance and deliver waste reduction education (e.g., home composting, and landscaping with native plants).

**Green Building:** Local government staff encouraged energy-efficient building design, use of previously used/repurposed or sustainably produced materials, and eco-conscious site preparation and construction practices. They offered builder incentives and publicized the results by contractors who “built green.” Some local governments built demonstration structures and created infrastructure to support the reuse of building materials.

**Waste Reduction and Recycling:** Local governments hired residential and commercial recycling services, offered on-site waste audits and technical help to businesses, hosted and publicized recycling collection events and recycling drop off locations, and produced consumer education programs. These activities helped raise Washington's recycling rate while reducing greenhouse gas emissions.

**Reduced Hazardous Wastes and Toxic Threats:** Local governments helped commercial and residential customers recognize, avoid exposures to, and properly dispose of hazardous wastes. They built and maintained hazardous waste collection facilities. They advertised and conducted special collection events. The governments also helped small business operators and residents adopt practices that reduce their hazardous waste exposures; they introduced less-toxic alternatives to popular consumer products, and devised solutions to problem wastes such as electronic appliance components or mercury-laden internal vehicle mechanisms.

**Waste Management Planning:** Local governments coordinated work with other public officials, local solid waste advisory committee members, and any interested public—to develop waste reduction strategies and detailed plans for their hazardous waste

collection/disposal systems, and for their materials recycling drop-off and sorting locations. These plans outline effective approaches to reduce solid and hazardous wastes and to promote key initiatives in the statewide Beyond Waste Plan.

### Enforce Solid Waste Management Requirements:

Local governments enforced the solid waste laws and local ordinances that protected public health. They issued operating permits and inspected certified facilities, they investigated complaints of illegal waste dumping or unsafe waste storage, and they issuing citations to violators.

## Funding Allocation

Ecology awarded CPG funds to local governments, based on two different criteria:

- The *regular cycle* (a two calendar-year period that starts in January each even-numbered year) distributes funding based upon a formula published in the rule.
- The *offset cycle* (a two calendar-year period that starts in January each odd-numbered year) awards funding based upon a competitive process.

Ecology allocated *regular cycle* funds, awarding 80 percent for Solid and Hazardous Waste Planning and Implementation grants, and awarding 20 percent for Solid Waste Enforcement grants. The projects we funded met minimum qualifications, and achieved desired environmental outcomes.

For **Planning and Implementation** grants, each county could apply for a base amount (\$100,000 last cycle) plus an added “per capita” amount. For **Solid Waste Enforcement** grants, each health jurisdiction could apply for its equal share of the available funds.

The 07-09 Biennial budget included two additional project types/funding provisions:

- Alternatives to Burning (ATB), and
- Beyond Waste.
  - The Washington Clean Air Act banned burning of yard and land-clearing organic material in many smaller communities state-wide, beginning January 1, 2007. The ATB proviso allocated up to \$2 million for “Backyard Burning Alternatives.” This funding helped local communities find ways to comply with the ban on outdoor burning. Affected communities used the funds to create

chipping, composting, and other local yard waste management programs. We awarded these funds during the regular cycle, through a separate competitive process.

- The Beyond Waste proviso allocated \$4 million to help local governments fulfill portions of the Beyond Waste Plan, Washington State's Solid and Hazardous Waste Management plan. The Beyond Waste Plan identified strategies to reduce the amount of solid waste generated, to reduce the kinds and concentrations of toxic chemicals used to produce/contained in consumer products, and to persuade residents to see so-called "wastes" as potential resources. The funding helped local governments initiate programs that best help them meet our Beyond Waste goals. The target areas include programs for processing organics (such as yard debris and food waste), for reducing/collecting/disposing moderate risk waste (small quantities of hazardous wastes from households or retail), and for promoting green building. Ecology distributed the funds, after a competitive process, during the Offset cycle.

## 2008-2009 Regular Cycle

Ecology awarded 140 grants to Washington counties, cities, and health agencies totaling \$21,015,228 during the regular cycle.

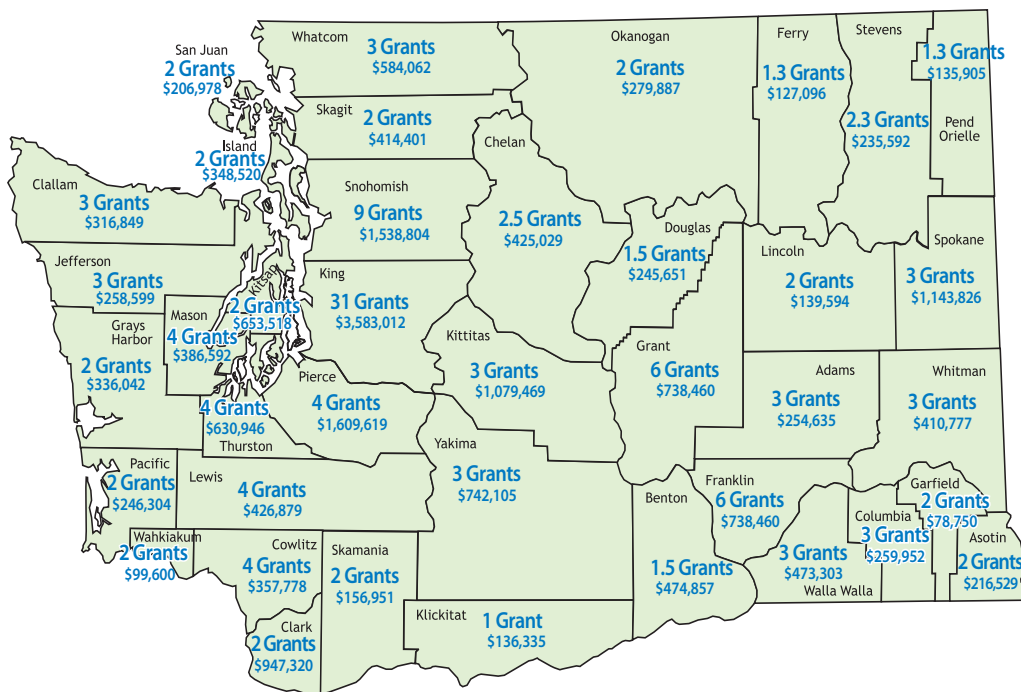
**Table 12: Remedial Action Grants-Fiscal Year 2008**

	Regular cycle	ATB Proviso
Organics (agricultural, yard, and food waste)	1,260,778	2,382,916
Green Building (energy efficient, low-toxicity)	72,439	
Waste Reduction/Recycling	5,013,630	
Solid Waste Enforcement	3,126,944	
Moderate Risk Waste	9,140,146	
Other	8,375	
LTCA Funds for Regular Cycle and ATB	\$18,622,312	\$2,382,916

Please view Figure 14 (below) to see the distribution of these allocations by county.

**Figure 14: 2007-09 Coordinated Prevention Grant (CPG) Awarded by County**

Regular Cycle and ATB Funding: \$21.06 Million - Statewide  
Fractions represent a grant awarded to any multi-jurisdictional health department





**The City of Federal Way (G0800358)**

distributed larger recycling containers to customers in the city's service area, to promote increased customer use of recycling options.



**Clallam County Environmental Health Services (G0800256)** partnered with the North Peninsula Building Association to create Built Green® Clallam County. The Built Green® grant project increased awareness--and mastery--of green building concepts, resources, and opportunities among Clallam County's home and commercial building contractors. Pictured here is a Clallam County home that received a 4 star Built Green certification for its green building features (e.g., energy saving solar panels, reused building materials, and low water/native plants landscape).

**Steven's County Public Works**

**(G0800545)** received Alternatives To Burning (ATB) funds to purchase a chipper, and hosted yard waste collection events in partnership with the County Fire Protection District, local town/city governments, and the state Department of Natural Resources. The events diverted about 20 tons of yard /woody debris from disposal or burning.

**Table 13: CPG Awards - Fiscal Year 2008****Coordinated Prevention Grants - Fiscal Year 2008**

Agreement	Recipient	County	Project Cost	LTCA
G0800460	Adams County	Adams	175,664	131,748
G0800523	City of Washtucna	Adams	57,000	42,750
G0800573	Adams County	Adams	106,849	80,137
G0800451	Asotin County Regional Landfill	Asotin	184,961	138,721
G0800568	Asotin County Health District	Asotin	103,744	77,808
G0800354	Benton County	Benton	526,293	394,720
G0800257	Benton-Franklin Health District	Benton-Franklin	106,849	80,137
G0800301	Chelan County	Chelan	304,856	228,642
G0800370	Entiat, City of	Chelan	155,000	116,250
G0800283	Chelan-Douglas Health District	Chelan-Douglas	106,849	80,137
G0800138	Clallam County Enviro Health	Clallam	142,465	106,849
G0800256	Clallam County Enviro Health	Clallam	65,000	48,750
G0800293	Port Angeles, City of	Clallam	215,000	161,250
G0800323	Clark County Public Health	Clark	142,465	106,849
G0800449	Clark County PublicWorks	Clark	1,120,628	840,471
G0800467	Columbia County Public Works	Columbia	143,000	107,250
G0800498	Columbia County Public Works	Columbia	191,603	143,702
G0800581	Columbia County Health Department	Columbia	12,000	9,000
G0800373	Kelso, City of	Cowlitz	27,105	20,329
G0800388	Longview, City of	Cowlitz	81,749	61,312
G0800387	Cowlitz County Public Works	Cowlitz	261,333	196,000
G0800409	Cowlitz Co Build & Plan Dept	Cowlitz	106,849	80,137
G0800283	Chelan-Douglas Health District	Douglas-Chelan	106,849	80,137
G0800288	Douglas County	Douglas	220,685	165,514
G0800459	Ferry County Waste Management	Ferry	151,684	113,763
G0800556	Northeast Tri-County Health District	Ferry	17,777	13,333
G0800257	Franklin-Benton Health District	Franklin Benton	106,849	80,137
G0900023	Franklin County Solid Waste	Franklin	290,420	217,815
G0900022	Franklin County Solid Waste	Franklin	9,000	6,750
G0800458	Garfield County Public Works	Garfield	100,000	75,000
G0800542	Garfield County Health District	Garfield	5,000	3,750
G0800475	Town of Coulee Dam	Grant	125,000	93,750
G0800497	City of Soap Lake	Grant	62,100	46,575
G0800518	Wilson Creek, Town of	Grant	44,500	33,375
G0800543	Grant County Public Works	Grant	330,548	247,911
G0800567	Grant County Health District	Grant	142,465	106,849
G0800582	Quincy, City of	Grant	280,000	210,000
G0800190	Grays Harbor County	Grays Harbor	142,465	106,849
G0800346	Grays Harbor County	Grays Harbor	305,591	229,193
G0800196	Island County Public Works	Island	322,228	241,671
G0800345	Island County Public Health	Island	142,465	106,849
G0800255	Jefferson Co. Public Health	Jefferson	10,000	7,500
G0800192	Jefferson County PH	Jefferson	142,465	106,849
G0800249	Jefferson County PW	Jefferson	192,333	144,250
G0800280	Seattle & King Co Public Health	King	1,618,399	1,213,799
G0800304	King County DNRP	King	763,340	572,505
G0800305	Kirkland, City of	King	75,979	56,984
G0800309	Seattle Public Utilities	King	947,715	710,786
G0800414	Maple Valley, City of	King	31,616	23,712
G0800415	Des Moines, City of	King	47,247	35,435
G0800416	Black Diamond, City of	King	7,796	5,847
G0800427	Town of Skykomish	King	1,665	1,249
G0800437	Newcastle, City of	King	15,849	11,887
G0800435	Algona, City of	King	5,597	4,198
G0800433	Covington, City of	King	28,609	21,457
G0800432	Enumclaw, City of	King	19,085	14,314
G0800431	Kenmore, City of	King	32,471	24,353
G0800430	Normandy Park, City of	King	61,989	46,492
G0800429	Kent, City of	King	123,511	92,633
G0800428	Sammamish, City of	King	64,192	48,144
G0800446	Public Health Seattle & King Co.	King	142,465	106,849
G0800279	Auburn, City of	King	88,233	66,175
G0800281	Bellevue, City of	King	106,445	79,834
G0800282	Bothell, City of	King	49,053	36,790
G0800306	Lake Forest Park, City of	King	21,500	16,125
G0800307	Snoqualmie, City of	King	22,451	16,838
G0800308	Shoreline, City of	King	79,585	59,689
G0800340	Tukwila, City of	King	29,701	22,276
G0800342	Redmond, City of	King	65,355	49,016
G0800357	Carnation, City of	King	4,340	3,255

G0800358	Federal Way, City of	King	138,237	103,678
G0800359	SeaTac, City of	King	41,251	30,938
G0800361	Woodinville, City of	King	17,708	13,281
G0800434	Issaquah, City of	King	32,296	24,222
G0800602	Renton, City of	King	93,668	70,251
G0800228	Kitsap County Public Works	Kitsap	728,892	546,669
G0800344	Kitsap County Health District	Kitsap	142,465	106,849
G0800300	Kittitas County Solid Waste	Kittitas	224,845	168,634
G0800403	Kittitas County Solid Waste	Kittitas	1,071,981	803,986
G0800407	Kittitas County Public Health	Kittitas	142,465	106,849
G0800319	Klickitat County Solid Waste	Klickitat	181,780	136,335
G0800362	Lewis County Health Department	Lewis	142,465	106,849
G0800405	Lewis County SW & Utility	Lewis	311,707	233,780
G0800447	Lewis County SW & Utility	Lewis	100,000	75,000
G0800450	Toledo, City of	Lewis	15,000	11,250
G0800445	Lincoln County Public Works	Lincoln	158,291	118,718
G0800555	Lincoln County Health Department	Lincoln	27,835	20,876
G0800278	Mason County Public Health	Mason	142,465	106,849
G0800254	Mason County Public Works	Mason	169,436	127,077
G0800193	Shelton, City of	Mason	93,824	70,368
G0800369	Mason County	Mason	109,731	82,298
G0800303	Okanogan County Public Works	Okanogan	230,717	173,038
G0800337	Okanogan County Public Health	Okanogan	142,465	106,849
G0800141	Pacific County	Pacific	142,465	106,849
G0800176	Pacific County DCD	Pacific	185,940	139,455
G0800443	Pend Oreille Public Works	Pend Oreille	163,429	122,572
G0800556	Northeast Tri-County Health District	Pend Oreille	17,777	13,333
G0800320	Tacoma-Pierce County HD	Pierce	142,465	106,849
G0800389	Tacoma-Pierce County HD	Pierce	303,893	227,920
G0800402	Tacoma, City of	Pierce	491,925	368,944
G0800404	Pierce County PW & Utilities	Pierce	1,197,341	898,006
G0800391	Pacific, City of	Pierce/King	10,533	7,900
G0800341	San Juan County Public Works	San Juan	171,748	128,811
G0800448	San Juan County Health	San Juan	104,223	78,167
G0800209	Skagit County Public Works	Skagit	410,069	307,552
G0800356	Skagit County Public Health	Skagit	142,465	106,849
G0800321	Skamania County HD	Skamania	50,000	37,500
G0800384	Skamania County Public Works	Skamania	159,268	119,451
G0800203	Arlington, City of	Snohomish	21,940	16,455
G0800204	Sultan, City of	Snohomish	6,313	4,735
G0800205	Snohomish County Solid Waste	Snohomish	1,315,028	986,271
G0800224	Lynnwood, City of	Snohomish	50,092	37,569
G0800225	Edmonds, City of	Snohomish	57,387	43,040
G0800250	Everett, City of	Snohomish	143,751	107,813
G0800292	Snohomish County Solid Waste	Snohomish	153,627	115,220
G0800408	Lake Stevens, City of	Snohomish	13,500	10,125
G0800360	Snohomish Health District	Snohomish	290,101	217,576
G0800484	Spokane Regional Solid Waste System	Spokane	1,219,236	914,427
G0800544	Spokane Regional Solid Waste System	Spokane	163,400	122,550
G0800572	Spokane Regional Health District	Spokane	142,465	106,849
G0800474	Stevens County Dept. of Public Works	Stevens	236,345	177,259
G0800545	Stevens County Dept. of Public Works	Stevens	60,000	45,000
G0800556	Northeast Tri-County Health District	Stevens	17,777	13,333
G0800191	Olympia, City of	Thurston	65,333	49,000
G0800210	Thurston County Public Health	Thurston	142,465	106,849
G0800318	Thurston County WWM	Thurston	316,732	237,549
G0800317	Thurston County HD	Thurston	316,731	237,548
G0800322	Wahkiakum County HD	Wahkiakum	37,800	28,350
G0800457	Wahkiakum County Public Works	Wahkiakum	95,000	71,250
G0900045	Walla Walla, City of	Walla Walla	275,005	206,254
G0900047	Walla Walla County	Walla Walla	213,600	160,200
G0900046	Walla Walla County	Walla Walla	142,465	106,849
G0800195	Whatcom County Public Works	Whatcom	584,284	438,213
G0800343	Whatcom County Health Dept	Whatcom	142,465	106,849
G0800368	Sumas, City of	Whatcom	52,000	39,000
G0800466	Whitman County Public Works	Whitman	238,057	178,543
G0800566	Whitman County Public Works	Whitman	167,180	125,385
G0800583	Whitman County Health Department	Whitman	142,465	106,849
G0800287	Yakima Health District	Yakima	142,465	106,849
G0800291	Yakima County Public Services	Yakima	700,508	525,381
G0800406	Yakima County Public Services	Yakima	146,500	109,875
Total CPG Grants for FY 2008			\$ 28,006,971	\$ 21,005,228
Amendments to Previous Cycle Grants			\$ 852,664	\$ 639,498
<b>Total CPG Projects in FY 2008</b>			<b>\$ 28,859,635</b>	<b>\$ 21,644,726</b>



## Public Participation Grants

Under chapter 170.105D RCW, the Model Toxics Control Act, state law reserves funding for a grant program that enables the public to actively participate in solving waste management problems. Funding comes from both the State and the Local Accounts.

The Public Participation Grant (PPG) Program awards **funding reimbursement** to non-government entities, not-for-profit organizations, or public interest groups whose proposed PPG projects rank highest among competing proposals. PPG applicants submit their designs of waste management education campaigns, best activity/sector practices training, or community awareness of—and public involvement in decision-making during stages of—a hazardous contamination site’s cleanup. The applicant-projects competed for PPG funding; a panel of Ecology experts from different disciplines ranked submittals.

The maximum award amount for the biennium was \$120,000; PPG award offers averaged about \$60,000. PPG applicants focused on serving a defined audience need, neither promoting a business/product nor making a profit, but achieving specific results:

- **Contaminated Site Cleanup Projects** encouraged meaningful public participation in (i) obtaining and sharing information about the risks of, and ways to avoid exposure to, hazards posed by nearby contamination, (ii) obtaining assistance from an “outside expert” to verify and explain technical information about how Ecology conducts a site investigation, decides on the appropriate cleanup method(s) and schedules, and (iii) learning about Ecology’s site cleanup process, including specific points at which public comments can influence Ecology’s decision-making about those sites. Examples include continued public involvement in Ecology’s oversight of the Hanford nuclear waste, the Duwamish River urban water, and the Spokane River heavy metals site cleanup projects.
- **Waste Management Projects** provided outreach and education to promote the elimination/reduction of waste streams. Examples include PPG campaigns that (i) provided community-specific recycling demonstrations and sustainability

information to low-income audiences, (ii) offered a homeowners’ survey listing dangers of using consumer pesticides and hazardous household products, and information about safer effective alternatives, and (iii) informed homeowners and business operators located around the Puget Sound, of practices they could adopt—or habits they could change—to keep toxic materials out of this water resource.

During the 2007-09 biennium, the PPG Program offered 63 grants, worth \$3.4 million. Approximately half of the funds were specifically earmarked for education and outreach directed at the protection and restoration of Puget Sound.

Examples below describe PPG recipient projects by category:

- Category: **Pollution Prevention Technical Assistance (PSA)**
  - Recipient: **Puget Soundkeeper Alliance**
  - Grant offer: **\$72,000**

The Puget Soundkeepers Alliance built on its successful “Clean Marinas” program. The PSA provided technical assistance and outreach to Washington’s marinas about how to reduce and properly manage hazardous waste, properly handle sewage, and prevent fueling spills. The goal of the project was to certify 20 new marinas into the program, serving about 5,000 boaters.

- Category: **Green Building**
  - Recipient: **Walla Walla Area Resource Conservation Committee (WWARCC)**
  - Grant offer: **\$28,000**

The WWARCC project introduced architects, construction contractors/sub-contractors, city and county planners, building codes/land use officials, real estate marketers, and developers in Walla Walla County to new, more environmentally friendly construction materials and techniques. The WWARCC scheduled a series of public workshops aimed at convincing 30 percent of participating contractors to begin or to increase their usage of green building materials and methods.



- Category: **Organics**
- Recipient: **YMCA of Greater Seattle**
- Grant offer: **\$57,600**

The YMCA of Greater Seattle offered educating to teens, their families, school staff, and surrounding communities about the amount of food wasted within a school daily. The project established ongoing composting programs in three Seattle-area schools, and created a “how to” guide for other schools seeking to adapt this project. The YMCA held two environmental symposia for students in the Puget Sound region, exploring ways to increase participation in: recycling, composting, green building, carbon footprint shrinkage, and sustainability.

- Category: **Contaminated Site Cleanup**
- Recipient: **Olympic Environmental Council**
- Grant offer: **\$70,000**

The Olympic Environmental Council (OEC) planned and hosted public involvement events (workshops, meetings, and forums) affecting cleanup of the Rayonier Pulp Mill site in Port Angeles. The OEC continued working with government agencies to develop/update a timeline showing the step-by-step cleanup process—including public comment. The OEC also contracted with an environmental consultant, to provide technical information “translations” to the public.

**Table 14: PPG-Fiscal Year 2008**

**Public Participation Grants - Fiscal Year 2008**

RECIPIENT	COUNTY	GRANT No.	LTCA	STCA
<b>Funded through Puget Sound Proviso</b>				
<b>Hazardous Contaminants Site Cleanup</b>				
Olympic Environmental Council	Clallam	G0800486	\$70,000	
Duwamish River Cleanup Coalition	King	G0800133	\$120,000	
Georgetown Community Council	King	G0800227	\$23,900	\$36,100
Citizens for a Healthy Bay	Pierce	G0800183	\$71,500	
Brackett's Landing Foundation	Snohomish	G0800139	\$59,000	
<b>Green Building Materials and Methods</b>				
North Peninsula Building Association	Clallam	G0800111		\$55,000
Lopez Community Land Trust	Island	G0800211	\$35,000	
Built Green of King and Snohomish Counties	King/Snohomish	G0800473		\$30,000
Built Green Washington	Kitsap	G0800371		\$70,000
Tacoma-Pierce County Built Green	Pierce	G0800367	\$50,000	
Habitat for Humanity of Washington State	Pierce	G0800489	\$71,000	
Sustainable Development Task Force of Snohomish County	Snohomish	G0800390		\$90,000
Built Green of King and Snohomish Counties	Snohomish/King	G0800473		\$30,000
Olympia Master Builders	Thurston	G0800316	\$75,000	
Northwest EcoBuilding Guild	Thurston	G0800177		\$55,000
Building Industry Association of Whatcom County	Whatcom	G0800495	\$50,000	
<b>Pollution Prevention &amp; Technical Assistance</b>				
Port Townsend Marine Science Center	Clallam	G0800472	\$54,700	
Lighthouse Environmental Programs	Island	G0800539	\$52,600	
Kirkland Chamber of Commerce	King	G0800168		\$45,000
Puget Sound Car Wash Association	King/Pierce	G0800170		\$15,000
Washington Toxics Coalition	King	G0800222		\$85,000
Puget Soundkeeper Alliance	King	G0800285		\$72,000
People for Puget Sound	King	G0800302		\$60,000
Puget Soundkeeper Alliance	King	G0800454		\$32,100
People for Puget Sound	King	G0800455		\$61,200
Environmental Coalition of South Seattle	King	G0800502	\$65,000	
Environmental Coalition of South Seattle	King	G0800601		\$61,000

EcoSolutions	Kitsap	G0800181		\$45,000
Stillwaters Environmental Center	Kitsap	G0800512		\$3,500
EcoSolutions	Kitsap	G0800591	\$16,460	\$27,470
San Juan Nature Institute	San Juan	G0800487	\$46,000	
Northwest Straights Foundation	Skagit	G0800456		\$120,000
Stilly Snohomish Fisheries	Snohomish	G0800513	\$34,440	
<b>Puget Sound Proviso Funding Total for FY 2008</b>		<b>\$1,887,970</b>	<b>\$894,600</b>	<b>\$993,370</b>
<b>Funded with Regular LTCA/STCA Dollars</b>				
<b>Hazardous Contaminants Site Cleanup</b>				
Skykomish Environmental Council*	King	G0800620		\$34,000
The Lands Council	Spokane	G0800178	\$60,000	
Center for Justice	Spokane	G0800510	\$77,000	
Lake Roosevelt Forum	Spokane	G0800488		\$52,500
<b>Green Building Materials and Methods</b>				
Cascadia Region Green Building Council	King	G0800540		\$73,000
Kirkland Chamber of Commerce	King	G0800585		\$70,000
Inland Northwest Built Green	Spokane	G0800541	\$40,000	
Walla Walla Resource Conservation	Walla Walla	G0800182		\$28,000
Central Washington Built Green Association	Yakima	G0800463	\$50,000	
<b>Organics Recovery and Reuse</b>				
YMCA of Greater Seattle	King	G0800462	\$57,600	
Washington Organics Recycling Council	Cowlitz	G0800223		\$60,000
Prescott Neighborhood Association	Walla Walla	G0800015		\$4,000
<b>Pollution Prevention &amp; Technical Assistance</b>				
Leavenworth Recycles	Chelan	G0800284		\$15,000
Spokane Neighborhood Action Program	Spokane	G0800412	\$35,000	
Sustainable Seattle*	King	G0800315	\$60,000	
Foundation for Private Enterprise Education	King	G0800509		\$32,600
Automotive Recyclers of Washington*	King	G0800521	\$34,000	
Pacific Northwest Pollution Prevention Resource Center*	King	G0800522		\$40,000
WA Citizens for Resource Conservation*	King	G0800569		\$27,100
Product Stewardship Institute	King	G0800570		\$88,000
International District Housing Alliance*	King	G0800571		\$79,745
Walla Walla Resource Conservation	Walla Walla	G0800186		\$7,500
Sustainable Living Center	Walla Walla	G0800413		\$75,000
RE Sources for Sustainable Communities	Whatcom	G0800187		\$30,000
ReUse Works	Whatcom	G0800194		\$20,000
Sustainable Connections	Whatcom	G0800520	\$30,000	
<b>Regular Cycle LTCA/STCA Dollars for FY 2008</b>		<b>\$1,180,045</b>	<b>\$443,600</b>	<b>\$736,445</b>
<b>Hanford Nuclear Waste [EPA Superfund/DoEnergy] Site</b>				
<b>Hazardous Contaminants Site Cleanup</b>				
Pacific Rivers Protection League	Benton	G0800189	\$38,800	
WA Physicians for Social Responsibility	King	G0800179	\$22,000	
Heart of America	King	G0800180	\$60,000	
Heart of America Research Northwest	King	G0800535	\$120,000	
Columbia Riverkeepers	Klickitat	G0800243	\$90,000	
<b>Hanford Funding for FY 2008</b>			<b>\$330,800</b>	
<b>LTCA &amp; STCA Funding for FY 2008</b>			<b>\$1,669,000</b>	<b>\$1,729,815</b>
<b>Total PPG Funding for FY 2008</b>		<b>\$3,398,815</b>		

\*Puget Sound Project funded by Regular PPG Cycle Dollars

**Figure 14: 2008 PPG Distribution by County**

**2008 Public Participation Grant (PPG) Distribution by County**  
 Fractions represent a grant offered to support a multi-jurisdictional public participation project  
 Total Funding \$3,398,815–Statewide



**Middle school students learn about plastics in the marine environment by dissecting albatross bolus (round lumps of chewed food).**

Port Townsend Marine Science Center

## Water Quality Program

### Stormwater Control Program

The Stormwater Program [activities] managed by Ecology's Water Quality Program [division], uses funding from the Local Toxics Control Account. During Fiscal Year 2008, the Stormwater Program funneled \$5,000,000 to various Puget Sound communities. Those communities used the funds to:

1. retrofit existing stormwater catchment and treatment equipment,
2. close-off/re-route non-stormwater discharges, away from municipal stormwater treatment systems, and
3. award grants to local creators of innovative stormwater control projects.

[See Table 15, below.]

**Table 15: Stormwater Program Grants**

Grant No.	Grant Recipient	Project Title	Amount Granted
G0900041	King County	White Center Regional Stormwater Improvements	\$1,000,000
G0800609	City of Tacoma	City of Tacoma Stormwater Pipe Retrofit Project	\$1,000,000
G0800627	City of Redmond Public Works, Natural Resources	Redmond Way Storm Truck and Water Quality Facility	\$1,000,000
G0900044	City of Puyallup	City of Puyallup & WSU Puyallup Extension Center - Research Stormwater Retrofit, Monitor	\$1,000,000
G0800956	Pierce County Public Works and Utilities, Water Programs Division	Sprinker Recreation Center Parking Lot Stormwater Retrofit	\$1,000,000
<b>Total</b>			<b>\$5,000,000</b>

Duwamish Source Control Boat Tours: This picture shows NWRO Regional Director Jeannie Summerhays (r), and Ecology's Deputy Director, Polly Zehm (l), on a Duwamish Boat tour with TCP's Rick Thomas (c). During Fiscal Year 08, Rick took 60 people on Duwamish Boat Tours to share sediment source control information. The boat tour provides information about work in progress, our tools, and teamwork; Rick introduces the Duwamish Source Control Group (SCWG), explains different processes (source control vs. remedial investigation), and balanced perspectives. Sights from the water help people understand challenges and complexities of trying to restore and protect the Lower Duwamish Waterway.





## Hazardous Waste and Toxics Reduction Program

### Local Source Control Partnership

In January 2008, Ecology selected 14 local governments to receive contract money to hire specialists to help area small businesses control, reduce, or eliminate toxic pollution sources. All 14 contracts were funded by the LTCA—three of them through the comprehensive Urban Waters Initiatives focused on (i) the Spokane River, (ii) Lower Duwamish waterway, and (iii) Commencement Bay. HWTR staff provided coordination, training, referral support, and access to information systems as part of the effort to control contamination and prevent re-contamination of those Urban Waters.

Ecology's approach to "solving local problems locally" took a distinctive shape with convincing results. In a one-to-one format with small business operators (who typically lack access to hazardous waste handling and disposal expertise), the local source control specialists reached a broad range of business sectors.

Because these businesses generate small quantities of hazardous waste we don't otherwise regulate or monitor them. But those source control specialists completed more than 2,300 technical assistance visits to local small business operators. We found this integrated approach nets a positive effect on the businesses' bottom lines and on the state's water quality. The fourteen local jurisdictions using contractors included:

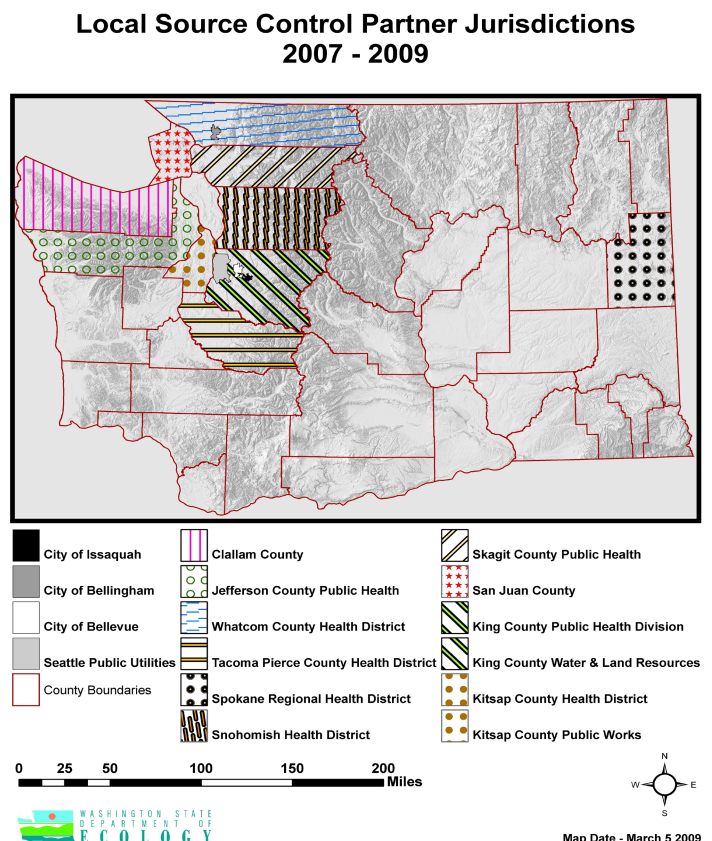
- City of Bellevue
- City of Bellingham
- City of Issaquah
- King County Environmental Health Division
- King County Water and Land Resources Division
- Kitsap County Health District
- Kitsap County Public Works
- San Juan County
- Seattle Public Utilities
- Skagit County Public Health
- Snohomish Health District
- Spokane Regional Health District
- Tacoma-Pierce County Health Department
- Whatcom County Health Department

Summary example of small quantity hazardous waste generation:

In spring 2008, local source technical assistance visits in Kitsap County revealed some dental offices were not properly handling and disposing of dangerous wastes. Some dental practices disposed spent x-ray fixer to the sewer, without first treating it to remove the silver. [Untreated spent x-ray fixer contains silver concentrations between 5,000 to 8,000 parts per million (ppm). State regulations allow no more than 5 ppm silver, and Kitsap County has an even more stringent limit of 1 ppm. Through follow-up technical assistance visits, the releases halted, thereby reducing illegal discharges of toxic wastes to waters flowing into the Puget Sound.

Visit Ecology's internet site <http://www.ecy.wa.gov/biblio/0901002.html> for a complete look at the Urban Waters Initiative focus on Commencement Bay, and <http://www.ecy.wa.gov/programs/hwtr/lsp/> for information on the Local Source Control Partnership.

**Figure 15: Local Source Control Partner Jurisdictions 2007-2009**



## Air Quality Program's LTCA Grants

### Washington Diesel Retrofit Program and Woodstove Change-out Program

Toxic air pollutants, or “air toxics”, refer to a broad category of more than 400 chemicals known or suspected to cause cancer or other serious health problems. Ecology identified twenty-one priority toxic air pollutants that pose the greatest health risks in Washington State, of which diesel particulate matter (PM) and wood smoke rank number one and number two. On-road and non-road diesel engines are the primary sources of diesel PM. Residential home heating using wood, plus intermittent wild fires, are the primary sources of wood smoke.

The Air Quality Program manages two of Ecology's most successful grant programs, the Washington Diesel Retrofit Program and Woodstove Change-out Program. The Diesel Retrofit Program provides grants to install emissions control technologies on diesel vehicles and equipment owned and operated by school districts, port and transit authorities, cities, counties, and public utility districts. The Woodstove Change-out Program grants funds to replace older, uncertified wood stoves with new cleaner burning certified wood stoves, fireplace inserts, or pellet stoves.

#### Diesel Retrofit Program:

For Washington denizens, diesel exhaust causes more health problems than any other form of air pollution.<sup>1</sup> Diesel exhaust contains a mix of hazardous pollutants that cause serious health effects. When inhaled, fine particles, known as diesel particulate matter (PM), penetrate deep into the lungs to aggravate or create lung and heart conditions. People with health problems such as asthma and heart and lung disease have more health problems when exposed to diesel exhaust. Even healthy people are more at risk for respiratory disease and cancer.

Diesel PM has been linked to the onset or worsening of cancer, emphysema, auto-immune disorders, asthma, heart disease, stroke, and the underdevelopment of children's lungs. Research also indicates diesel PM causes premature deaths within populations and occupations where people are regularly exposed to these toxins. For this reason, diesel PM is one of the most toxic forms of air pollution.

More than four million people in Washington live or work close to busy roads, where diesel PM is at its highest levels.<sup>2</sup> The Air Quality Program has determined that diesel PM harms human health more than any other air pollutant in Washington State. About 70% of all cancers caused by air toxics are attributable to diesel PM.<sup>3</sup>

The Air Quality Program worked with diesel fleets to reduce harmful diesel emissions by installing retrofit emission control technologies on diesel vehicles and equipment. The program has granted funds to retrofit nearly 400 diesel fleets, including school districts, cities, counties, public utility districts, port authorities, transit authorities, and municipal waste haulers. These technologies effectively reduce diesel PM emissions by 25% to 100% and toxic emissions by 50% to 100%. We posted information about Ecology's Clean Diesel Programs at: [http://www.ecy.wa.gov/programs/air/cars/diesel\\_exhaust\\_information.htm](http://www.ecy.wa.gov/programs/air/cars/diesel_exhaust_information.htm)

The Governor's 2007-2009 budget entrusted to the Air Quality Program \$7,173,000 in Local Toxics Control Account money to reduce diesel emissions from public fleets. Statewide, between July 1, 2007 and June 30, 2008, the Air Quality Program spent \$3,772,378.45 retrofitting 631 diesel school buses and 333 diesel vehicles owned by local government. The Air Quality Program expects to spend the remaining fund balance by the end of the fiscal period, June 30, 2009, or early in the 2009-2011 biennia.

<sup>1</sup> Concerns About Adverse Health Effects of Diesel Engine Emissions White Paper, Harriet Ammann and Matthew Kadlec, December 3, 2008, Publication No.08-02-032.

<sup>2</sup> Diesel Particulate Emission Reduction Strategy for Washington State, Washington State Department of Ecology, Air Quality Program, December, 2006.

<sup>3</sup> Washington State Toxic Air Pollutants Priorities Study, Matthew Kadlec, Washington State Department of Ecology, November 12, 2008, Publication No. 08-02-030.

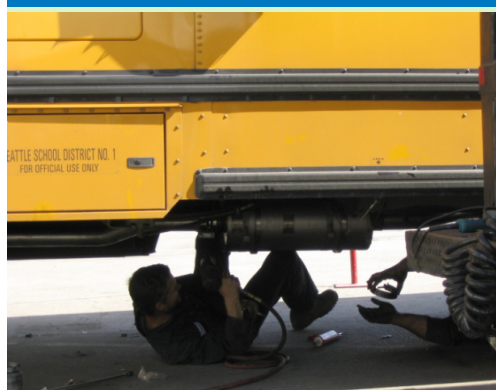
## Fiscal Year 2008 Report:

Diesel Retrofit Program	Revenue	Encumbered	Expenditures	Fund Balance
School Bus	4,840,000	4,840,000	1,886,996	2,953,004
Local Government	2,333,000	2,333,000	1,885,382	447,618
<b>Total</b>	<b>\$7,173,000</b>	<b>\$7,173,000</b>	<b>\$3,772,378</b>	<b>\$3,400,622</b>

The benefits to human health outweighed the costs of reducing diesel pollution. The California Air Resources Board found that every dollar invested in reducing diesel emissions results in at least three—and as much as eight—dollars in savings from improved public health and avoided health problems.<sup>4</sup> The Union of Concerned Scientists estimates that for every dollar invested in diesel retrofits, nine to sixteen dollars are returned to society.<sup>5</sup> These estimates pale as endorsements, compared to actual testimonials provided by Washington fleet managers, fleet mechanics, school teachers, and school employees:

- Mercer Island School District's transportation supervisor, head mechanic, and bus drivers suddenly realized they no longer smelled diesel exhaust when they walked behind the buses in the morning. Because the District's bus facilities are located in a residential area, the supervisor historically received complaints from the neighbors about diesel exhaust. Once the buses were retrofitted, the complaints stopped.
- Walt Gobel, retired fleet manager for Pasco School District reported after retrofitting his buses, "For the first time in my career, we went through an entire school year without a single bus driver submitting a sick leave slip, complaining of illness from breathing diesel fumes from school buses."
- Marcella Lindert, Manson Elementary School Teacher, says, "This year I have not noticed fumes in my classroom before or after school. In years past, I was often forced out of my room because the smell was so strong as to give me a headache. It would permeate the room and make it impossible to remain. I would have to leave long enough to allow the smell to dissipate. This year I have not had one bad day. The fume problem seems to be solved."

- Stan Lindert, Head Custodian Manson Elementary School, says "Just today I noticed how nice it's been to not receive constant complaints about the exhaust fumes in the building this school year. I believe ...the new systems you are using are well worth whatever they cost."



Installer at Seattle School District.



Air Quality Program Manager, Stu Clark, and children at Kent School District.

## Local Governments' Diesel Retrofit Grants Program

The Air Quality Program manages Ecology's Local Government's Diesel Retrofit Grants Program. We provided grants to cities, counties, port authorities, transit authorities, and public utility districts to purchase and install retrofit emissions control technologies on their heavy-duty diesel vehicles.

This uniquely designed program used state-hired contractors who matched appropriate emissions control technologies to each entity's diesel fleet operations need. These systems effectively removed 30% to 100% of the fleet's previous particulate emissions, depending on the control technology chosen.

<sup>4</sup> Emission Reduction Plan for Ports and Goods Movement in California – Proposed, California Environmental Protection Agency, Air Resources Board, March 21, 2006.

<sup>5</sup> Sick of Soot: Reducing the Health Impacts of Diesel Pollution in California, Union of Concerned Scientists, Cambridge, MA, 2004.



Started in 2005, the Diesel Retrofit Program has awarded 52 grants and successfully retrofitted more than 300 diesel vehicles, to date—repair trucks for public utility districts; cranes, tractors, and heavy machinery used by port authorities, transit authorities, and municipal waste haulers. The “retrofits” included installing (i) diesel particulate filters on 150 transit buses, (ii) closed crankcase ventilation filters on 250 transit buses, and (iii) diesel oxidation catalysts on 150 maintenance-type vehicles owned by cities, counties, and public utility districts. The program scheduled another 300 retrofits for maintenance trucks.

Woodstove Change-out Program

Smoke is the second-highest health risk/ toxic air pollutant in Washington State. Fine particles from smoke emissions can be inhaled and carried deep into the lungs. Exposure to smoke emissions were linked to significant adverse health impacts, including asthma, lung diseases, heart diseases and death. The combustion of wood generates both fine particles, and carcinogenic chemicals and compounds. The particles can carry carcinogens into the body, increasing a person’s risk of developing certain types of cancer. Adverse health impacts are particularly prevalent among sensitive populations, including children, the elderly, and people with, or predisposed to, heart and lung ailments. The federal Environmental Protection Agency (EPA) estimates the societal and health care costs of exposures to smoke from uncertified wood stoves and fireplaces in Washington State, to be between \$930 million and \$1.1 billion each year.

During the winter months, burning wood for home heating is the largest single contributor of toxic smoke emissions in Washington. During stagnant weather conditions, smoke from wood heating devices can create a dense blanket of pollution over towns and cities, exposing citizens to unhealthy conditions. Some communities experience levels of particle pollution above healthy limits (20 µg/m<sup>3</sup> on a 24-hour average) many times a year.

Washington State legislation established tougher emission standards for wood heating devices in 1991. Wood stoves sold in the state prior to that year had no emission limits, and few emission controls. Replacing these older stoves with “certified” stoves that meet Washington’s health protective standards, or with other types of cleaner-burning heating devices (e.g., pellet

stoves, or natural gas or propane heating appliances), helps reduce the amount of pollution emitted into the air in Washington communities. Certified stoves are 60-80% cleaner than uncertified stoves. The EPA estimates that replacing 20 uncertified woodstoves with twenty certified stoves, reduces toxic smoke particles by 1 ton each year. Replacing uncertified stoves with gas or propane appliances provides even greater emissions reductions.

The Department of Ecology received \$1.5 million in Local Toxics Control Account money for a woodstove change-out program. In June, 2008, we awarded six grants to five local air agencies, to change-out woodstoves in areas that exceeded—or risked exceeding—the federal standards [size and concentrations] for particulate matter (PM2.5\*). Criteria for the successful awards included replacing uncertified devices that were a home’s primary heat source with ones that burn high volumes of wood each year. By the end of December, 2008, we will have expended more than 30 percent of these grant funds, replacing 313 uncertified wood stoves and removing 8.9 tons of toxic fine particles from our air.

More wood stove owners asked to participate than we had funds to support. Each local air agency compiled a waiting list of would-be participants, in case further funding becomes available. We will fully expend these grant funds by the end of the biennium.

Table 16: Local Government’s Diesel Retrofit Grants Program Recipient Expenditures in Fiscal Year 08

Recipient	Expenditures
Ben Franklin Transit	70,511
City of Cashmere	6,156
City of Everett	18,921
City of Longview	27,127
City of Moses Lake	29,566
City of Oak Harbor	10,764
City of Spokane	131,017
City of Toppenish	10,500
City of Yakima	37,491
CTran Transit Authority	628,164
Intercity Transit Authority	120,017
Link Transit Authority	44,498
Snohomish County	124,985
Spokane Transit Authority	625,665
Retrofit Expenditures	\$1,885,382



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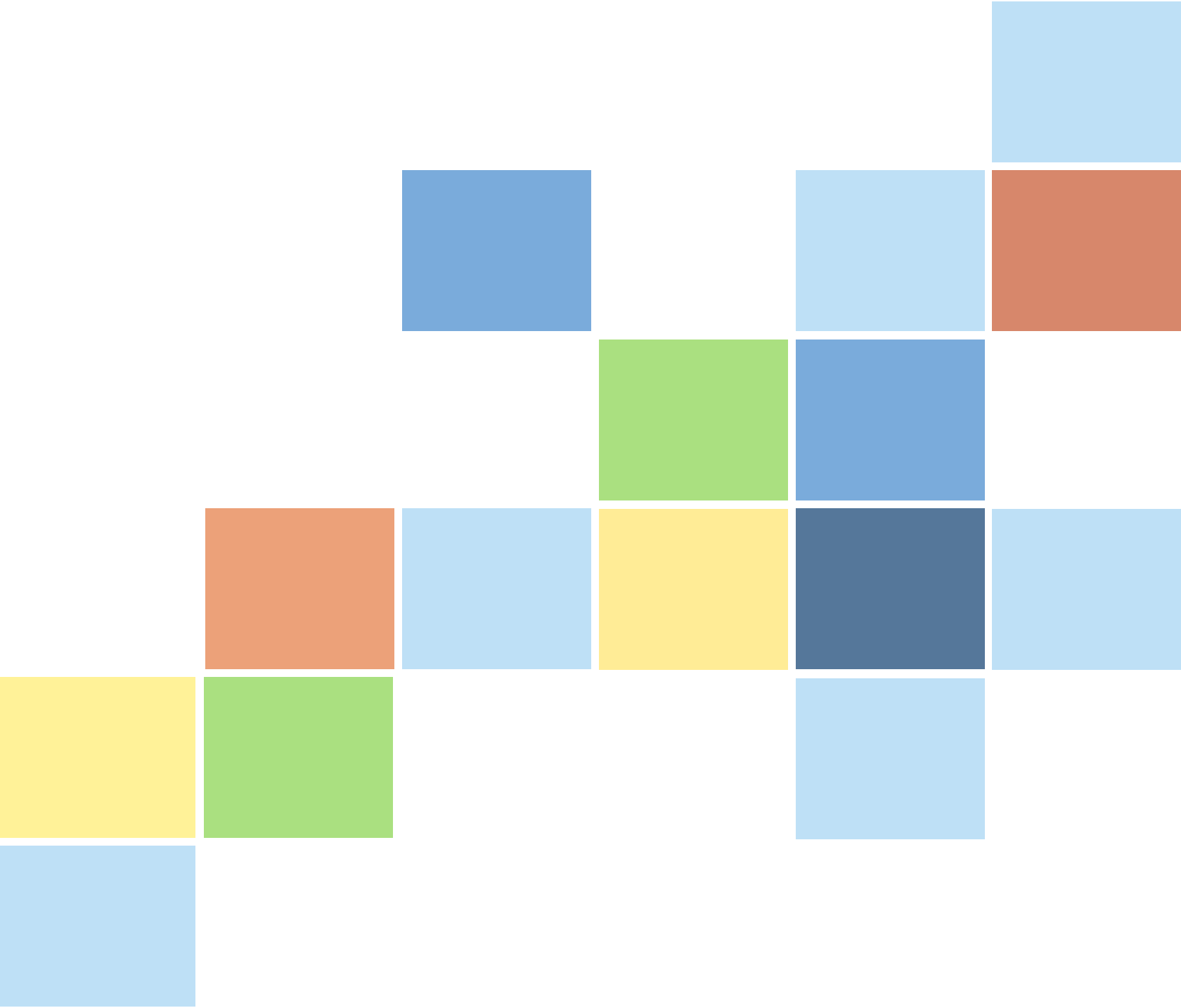
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