

GMAP Overview

February 28, 2007

- Follow-up from August 2006 GMAP
- Reducing Toxic Threats performance measures
- Mercury Chemical Action Plan Status



Reducing Toxic Threats

Follow-up to August 2006 GMAP: Reducing Toxics Logic Model

We do this

Regulate toxic releases to prevent and reduce exposure to toxins; clean up toxic pollution; and, assist businesses and individuals in reducing and managing their wastes and discharges

Outputs:

- Permits/Inspections
- Site cleanups
- Water quality cleanup
- Technical & financial assistance
- Spill Response
- Chemical action plans

... so that ...

Human, animal and environmental exposure to toxic pollutants is reduced

Immediate Outcomes:

- Permit Compliance
- Trend in diesel emissions
- Trends in smoke
- Toxic loadings to water
- Pounds of toxins reduced
- Volume of spills

... so that ...

There are fewer unhealthy air days, beach closures, and shellfish/fish consumption warnings.

Intermediate Outcomes:

- Healthy air days
- Beach closures
- Fish consumption warnings

... so that ...

Health risk to people is reduced, land and aquatic resources are cleaned up and waste is significantly reduced

Ultimate Outcomes:

- Percent of population exposed to toxins
- Toxins in fish

Reducing Toxic Threats

Follow-up to August 2006 GMAP: Operating Budget Status

2007 - 09 Operating Budget Request

	Agency Request		Governor 12/06		Difference	
	FTE	Total	FTE	Total	FTE	Total
\$ in thousands - Annual Average FTE's						
Reducing Toxic Discharges to Waters	1.8	1,140	0.0	0	(1.8)	(1,140)
Safer Chemical Alternatives	1.0	400	1.0	400	0.0	0
Public Participation Grants	1.0	1,779	1.0	1,780	0.0	1
Hanford Tank Waste Strategy		328		492	0.0	164
Hanford Damage Assessment Lawsuit		328		328	0.0	0
Biosolids		422		422	0.0	0
Pesticide Container Recycling		260		260	0.0	0
Underground Storage Tank Reauthorization			3.4	679	3.4	679



Reducing Toxic Threats

Follow-up to August 2006 GMAP: Capital Budget Status

2007 - 09 Capital Budget Request

	Agency Request		Governor 12/06		Difference	
	FTE	Total	FTE	Total	FTE	Total
\$ in thousands - Annual Average FTE's						
Remedial Action Grant Program	1.0	84,475	1.0	84,475	0.0	0
Coordinated Prevention Grants		25,500		25,500	0.0	0
Reduce Health Risks from Toxic Diesel Pollution	3.0	9,265	3.0	7,170	0.0	(2,095)
Reduce Health Risks from Wood Stove Pollution	1.0	2,215	1.0	500	0.0	(1,715)
Safe Soil Remediation Program		2,000		2,000	0.0	0
Skykomish Cleanup		7,000		7,000	0.0	0
Waste Tire Pile Cleanup	1.0	5,000	1.0	5,000	0.0	0

Reducing Toxic Threats

Performance Measures to Get Toxics out of the Air we **BREATHE**

OUTCOME: Increase the number of people living in communities with air pollution below levels of health concern for particulates (diesel and smoke).

- **Diesel emissions**, the highest health risk source of toxic air pollution, have been reduced by ____% from 2005 levels. (Target: 20% by 2010)
 - Strategies:
 - Retrofit school buses
 - Retrofit public fleet engines
 - New vehicle engine standards
 - Reduce idling
 - Increase use of low sulfur fuels

- **Smoke**, the number of days monitoring shows fine particulate concentrations exceed healthy levels (20 ug/cm 24-hour average) is reduced by ____ % from 2005 levels (Target: 20% by 2010)
 - Strategies:
 - Replace wood stove with cleaner technology wood stoves
 - Increase outdoor burn bans
 - Increase composting and waste-to-product



Reducing Toxic Threats

Performance Measures to Get Toxics out of our **SOIL**

OUTCOME: Reduce the number of years to cleanup sites managed by the Department.

Site Cleanup

- Number of **Statewide and Puget Sound** sites completed in 2007 – 2009 biennium, and number of contaminated sediment acres cleaned up.
 - Strategies:
 - Rank and prioritize known contaminated sites
 - Begin cleanups
 - Complete cleanups within budget and schedule
 - Reduce the average number of years to complete cleanups
 - Respond to Voluntary Cleanup Program applicants within 90 days

OUTCOME: Decrease the number of children exposed to contaminants in schools or child care play areas.

Schools & Child Care Facilities

- Number of **schools** assessed for contamination; and, Percent cleaned up from 2005 (Target: 4 per year)
 - Strategies
 - Meet the scheduled timelines for assessing schools for lead and arsenic contamination
 - Meet the scheduled timelines for assessing child care playgrounds for lead and arsenic contamination
 - Clean up schools and day cares with contamination

Reducing Toxic Threats

Performance Measures to Get Toxics out of our WATER

OUTCOME measure: The number of polluted water ways/bodies is decreased.

Oil Spills

- Percent of large oil spills (over 25 gallons) where cause is identified and steps implemented to avoid repeat
 - Strategies:
 - Reduce spills from regulated and unregulated vessels and facilities
 - Reduce spills occurring during oil transfer operations
 - Inspect oil transfer operations
 - Assess near accidents for strategic deployment of response equipment

Hanford

- Percent of Hanford waste sites near the Columbia River that have been cleaned up (Target: 761 sites by 2012)
 - Strategies:
 - Remove contaminated soil from Hanford waste sites near the Columbia River (target 125,000 tons/quarter)
 - Number of million gallons of contaminated water pumped and treated (target: 320 million/qtr)
 - Reduce the amount of polluted water reaching groundwater and the Columbia
- Number of TriParty Agreement (TPA) milestones met by Department of Energy
 - Strategies:
 - Number met, modified or resulted in regulatory action by US DOE (Target: All)



Reducing Toxic Threats

Performance Measures to Get Toxics out of our **WATER**

OUTCOME measure: The number of polluted water ways/bodies is decreased.

Toxics Loading

- Number of toxic chemicals for which we have a reasonable estimate of loading from municipal and industrial wastewater treatment facilities (other than stormwater)
 - Strategies
 - Percent reduction in loading of mercury

Wastewater Discharge Permits

- Number of municipal and industrial wastewater treatment (other than stormwater) facilities with permit limits for toxic chemicals; and, Number violating those limits (will be chemical specific)
 - Strategies:
 - Number of municipal and industrial wastewater treatment (other than stormwater) facilities discharging to Puget Sound that have tested sediments near the outfall for compliance with Sediment Management Standards; Number exceeding those standards

Stormwater

- Number of local governments developing and implementing stormwater management programs (phase 1 and 2 municipal stormwater permits) (Target: 100% by 6/30/08)



Reducing Toxic Threats

Performance Measures to Get Toxics out of our **HOMES AND OFFICES**

OUTCOME: The amount of hazardous waste generated by businesses has been reduced from the 2005 baseline. (Target: Reduce 11 million pounds by 2009)

Hazardous Waste

- Number of businesses changed their processes, with a resulting Percent decrease in the amount of hazardous waste produced and released or requiring management/oversight. (Target: 400 businesses and a 20% decrease by 2009)

OUTCOME: Reduce the amount of toxins released into the environment from products

Mercury

- The amount of mercury collected/captured from circulation has increased ____ pounds (baseline 2001) (Target: 4000 pounds by 2009)
 - Strategies:
 - Pounds from dental offices (Target: 800 pounds by 2009)
 - Pounds from auto recycling of switches (Target: 400 pounds by 2009)
 - Pounds from hospitals (Target: 400 pounds by 2009)
 - Pounds from fluorescent bulb recycling (Target: 400 pounds by 2009)

E-Waste program

- The amount of toxic chemicals associated with electronics that are properly disposed of is increased.
 - (Starting in 2008) Number of registered collectors of recycled electronics (Target: 4)
 - (Starting in 2009) Number of collection locations in operation (Target: 50)
 - (Starting in 2010) Pounds of electronics recycled (Target: 10 million)

Reducing Toxic Threats

Mercury Chemical Action Plan: Background and Goals

We do this

Develop strategies and actions to reduce human, fish and wildlife exposure to mercury

So that

We reduce and/or eliminate mercury emissions from fossil fuel combustion, mining & manufacturing, products and product disposal

So that

Human health is protected and fish and shellfish are safe to eat

How are people exposed to mercury?

- Most commonly through eating certain fish that are long-lived or predators that have accumulated mercury in their tissues through the food web.
 - However, exposure also occurs through:
 - Inhaling mercury vapor from liquid mercury spills
 - Skin absorption through contact with mercury

First Chemical Action Plan for persistent bioaccumulative toxins (2003):

- Eliminate all unnecessary mercury uses and releases by 2015
 - Fossil Fuel Combustion
 - Mining and Manufacturing
 - Consumer Products
 - Disposal (end of life)

Mercury Education and Reduction Act (MERA) (passed 2003)

- Prohibits sales of certain products and provides exemptions;
- Provides state purchasing preference for mercury-free products;
- Prohibits school purchasing of mercury;
- Mandates fluorescent lamp labeling;
- Establishes disposal education plan;
- Authorizes regional clearinghouse; and
- Establishes penalties.

Reducing Toxic Threats

Recommendations from the Mercury Chemical Action Plan included reducing mercury releases from the following sources:

Mercury release from fossil fuel combustion

1. Coal fired power plants
2. Fuel oil distillate, residual and crude
3. Oil refineries
4. Wood fired boilers and stoves

Mining and Manufacturing

1. Mining
2. Manufacturing

Use of Products Containing Mercury

1. Specific products – thermometers, batteries, wall thermostats, lamps, vehicle switches
2. User groups – medical, dental, veterinarians, K-12, Universities, laboratories, state purchasing, dairies

Products Containing Mercury at End of Life

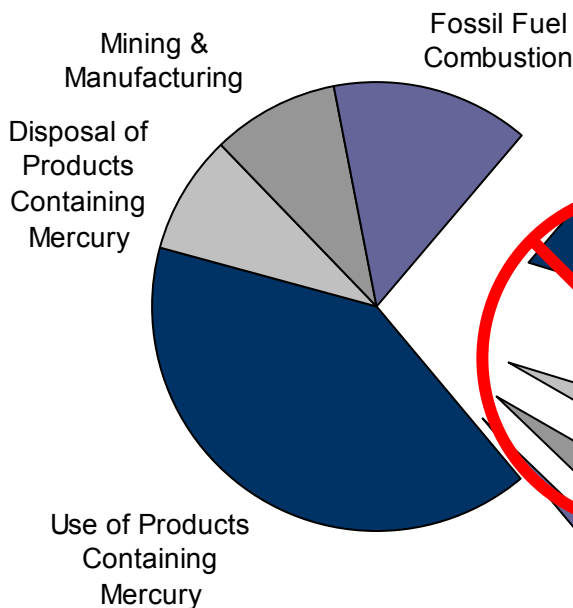
1. Disposal of products – SW combustion, medical incinerators, landfills, medical autoclaves and retorts, publicly operated treatment works, septic systems, sewage sludge incinerators, auto recyclers, steel recyclers, crematoria
2. Recycling and disposal as hazardous waste – household haz waste facilities
3. Long-term repository

Reducing Toxic Threats

Actions over the past five years have resulted in a reduction of **2,300 pounds per year** of mercury releases.

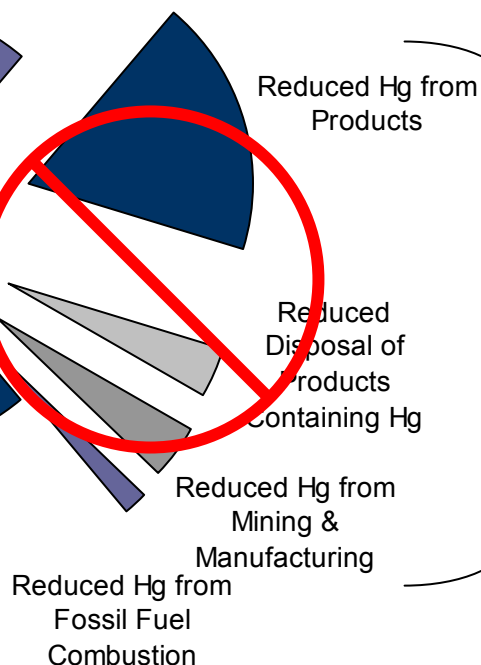
2001

Estimated 6,000 lbs/yr
released into the environment



2006

Estimated 3,700 lbs/yr
released into the environment



Between 2001 and 2006 there is approximately 2,300 pounds per year of mercury no longer being released into the environment



Reducing Toxic Threats

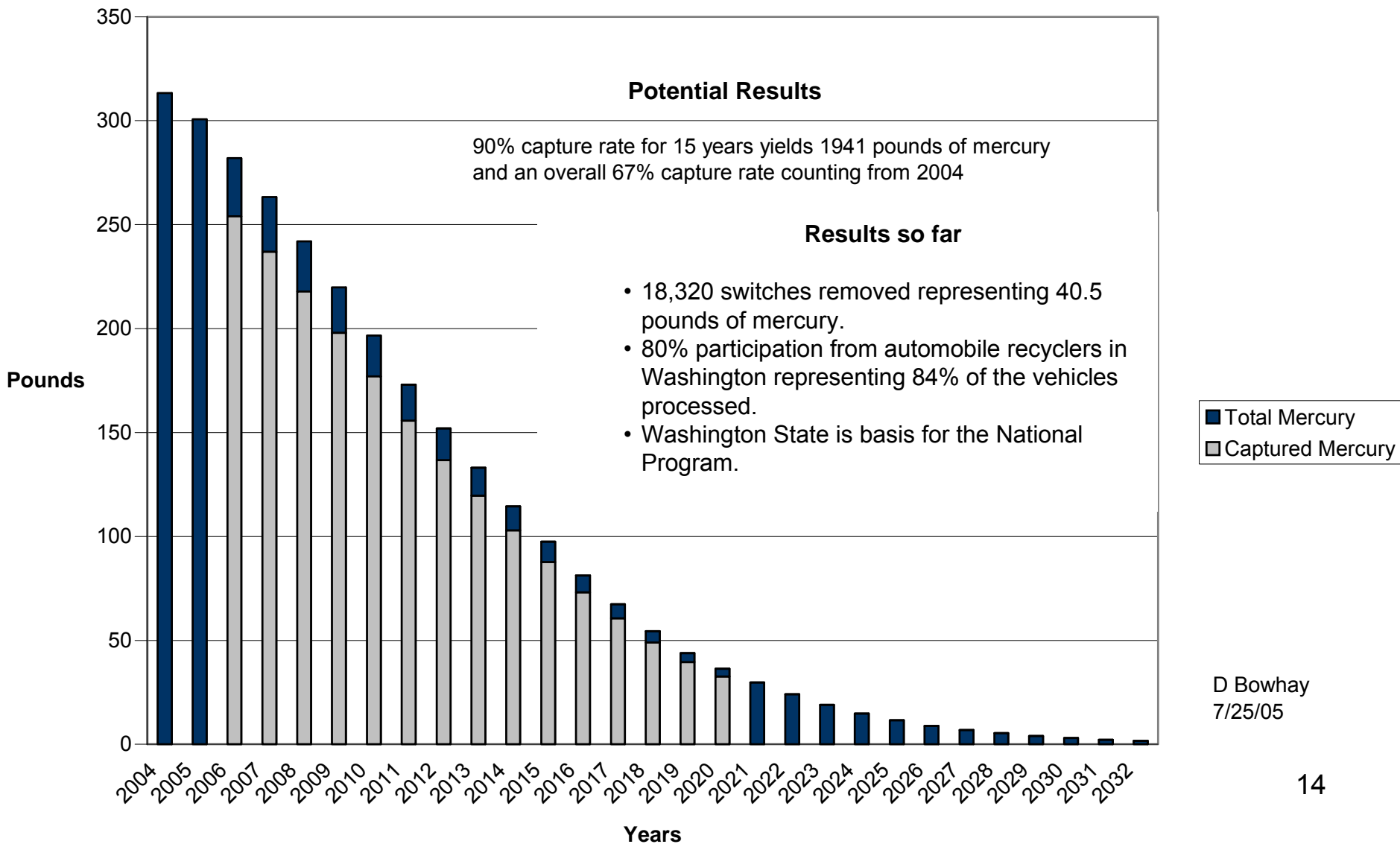
Mercury Chemical Action Plan: Product Use Results to Date

Banned Products	Collection Goals	Pounds Collected thru 2006
Thermometers	3,000 lbs	3,000
Manometers	2,200 lbs	2,200
Schools	2600	2400
Phase Outs	Collection Goals	Pounds Collected thru 2006
Hospitals	400 lbs/yr	1,880
Medical Waste ("Red Bags")	100 lbs/yr	85
Mining	No Goal Set	56
Thermostats	40 lbs/year	78
Auto Convenience Switches	200 lbs/yr	41
Utility Switches & Relays	500 lbs/yr	70
Collection & Recycle	Collection Goals	Pounds Collected thru 2006
Button Cell Batteries	80 lbs/yr	32
Fluorescent Lamps	500 lbs/yr	65
Dental Amalgam Waste	300 lbs/yr	800

Total costs to 1/11/06: \$2.5 Million (includes development of laws, projects and contracts)

Reducing Toxic Threats

Mercury captured from retired automobiles

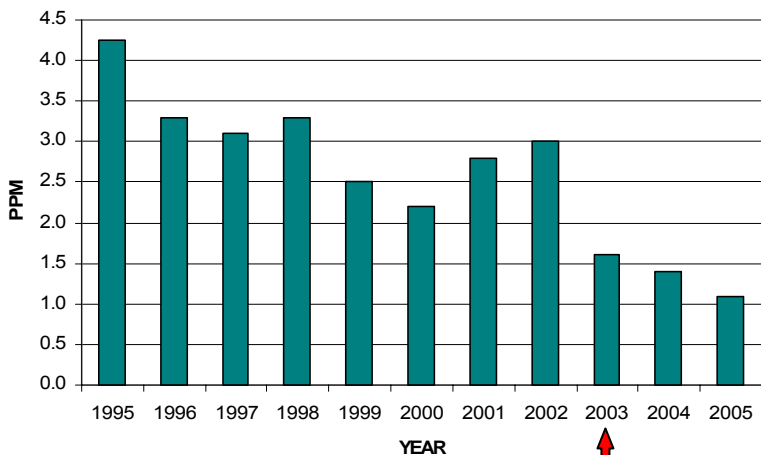


Reducing Toxic Threats

Dentists Reduce Mercury Discharges

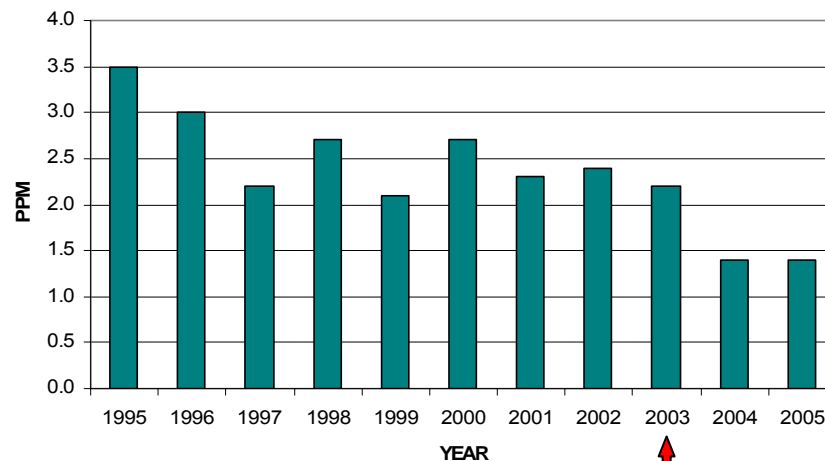
Pounds of Mercury Reduced in Spokane and Seattle Biosolids

SPOKANE, BIOSOLIDS - MERCURY



Dental MOU

SEATTLE, WEST POINT BIOSOLIDS - MERCURY



Dental MOU

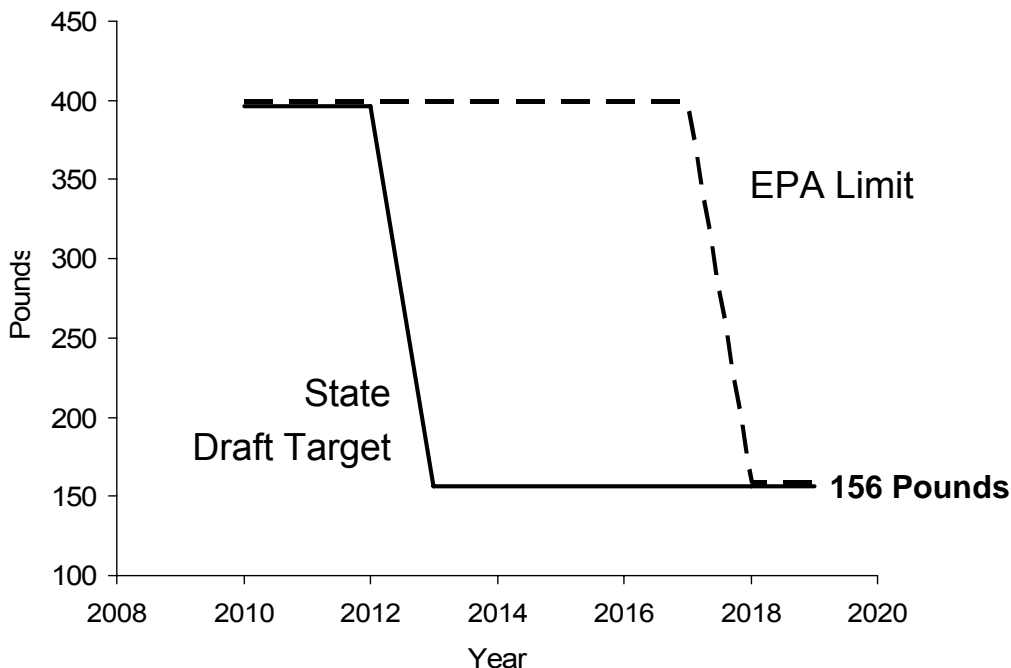
Strategies:

- Seattle and Spokane local government focus on mercury:
 - Collection events for K-12 schools.
 - Collection services for small businesses and homes.
 - Aggressive education and outreach to dental offices, including an ordinance requiring installation of separators.
- Ecology brought more focus on Dentists through an Statewide Memorandum of Understanding (MOU) in 2003

Reducing Toxic Threats

Capping statewide mercury emissions from coal burning power plants

The cap will cover existing and new plants.



Currently, there is one plant operating, one plant going through the Energy Facility Site Evaluation Council's (EFSEC) permitting process, and one plant in the early planning stages.

Strategies to reduce mercury emissions

- Regulate power plants
 - One state power plant rule is being developed jointly with EFSEC
 - Anticipate proposing in spring 2007 and adopting fall 2007
- Next step – review emissions from other sectors – for instance, cement kilns

Mercury: Emerging Issues & Challenges

- Are we going to make the Mercury Chemical Action Plan 2015 Goals?
- Potential “implementation overload”
- Mercury Education and Reduction Act does not currently address:
 - All mercury switches and relays
 - Prohibition of the sale and/or purchase of bulk mercury
 - Coordination on national repository and international issues
 - Long term funding, particularly for environmental monitoring, data collection and analysis
 - Mandatory recycling for some products, like fluorescent lamps
- Cement kilns are a next significant air source to review