

# Reduce Toxic Threats GMAP



## Focus on Prevention

October 9, 2009

- Project Updates
  - Status Report
- Follow-up
  - Assignments from the November, 2008 GMAP
- Performance Measurements
  - Reducing Toxic Threats Measures

# Reduce Toxic Threats GMAP



## Purpose

- Foster development of prevention strategies throughout the agency as the smartest, cheapest and healthiest approach.

## Long Term Goals

- Minimize hazard, exposure and waste before products are manufactured or sold
- Prevent toxic pollutants being introduced into the ecosystem
- Strong voice in federal toxics policy reform

# Reduce Toxic Threats Initiative



Three pronged approach

1. Cleanup
2. Manage
3. **Prevent**

## **POLICY FOCUS- STRATEGIC ALIGNMENT**

- Protect the most vulnerable
- Shift the burden from taxpayers to product/chemical manufacturers
- Gather data on presence and hazards
- Continue to focus on Persistent Bioaccumulative Toxic Chemicals (PBTs)
- Encourage safer alternatives

# 09-11 Work Plan



## Toxics in Products

- Implement Children's Safe Products Act (CSPA)
- Align Ecology lists of priority chemicals
- Collaborate with other states

## Toxics in Stormwater

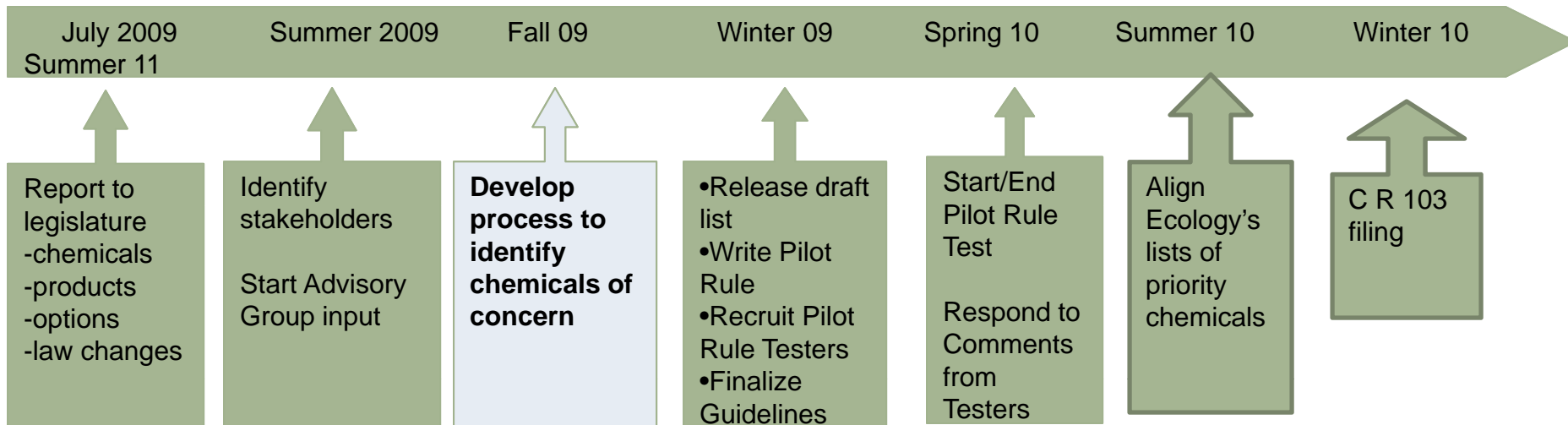
- Implement the PBT initiative
- Reduce diesel emissions
- Develop a toxics reduction strategy for Puget Sound
- Demonstrate approaches to reducing toxics in stormwater
- Ban use of copper brake pads

# Follow up to the November, 2008 GMAP



Follow up question/assignment	Who	Status
<p>Toxics Reduction Advisory Committee (TRAC)</p> <ul style="list-style-type: none"> <li>•Define scope of 50% reduction goals</li> <li>•Will TRAC rec's get us to the goal?</li> <li>•How will we address fee equity questions?</li> </ul>	K Seiler	Legislation to implement TRAC rec's was not picked up in 09 session.
<p>Are Treatment Storage Disposal (TSDs) facilities tracking Hg reductions?</p>	K Seiler	TSDs only track what they receive, not what is reduced
<p>What are we doing about the export of recycled computers and TVs to other countries for metal extraction?</p>	Carol Kraege	Reporting and auditing provide verification
<p>Develop performance measures for prevention</p>	Carol Kraege	In each work plan element

# Toxics in Products: Children's Safe Products Act



## Challenges

- Enforcement sampling cost, techniques
- Consistency with other states/feds
- Size of regulated universe
- Defensible chemical list
- Integration with other similar processes

## Opportunities

- Use lesson learned to inform TSCA reform – we will have a better understanding of Industry issues.
- Coordinate with other states to promote consistency among lists of high priority chemicals

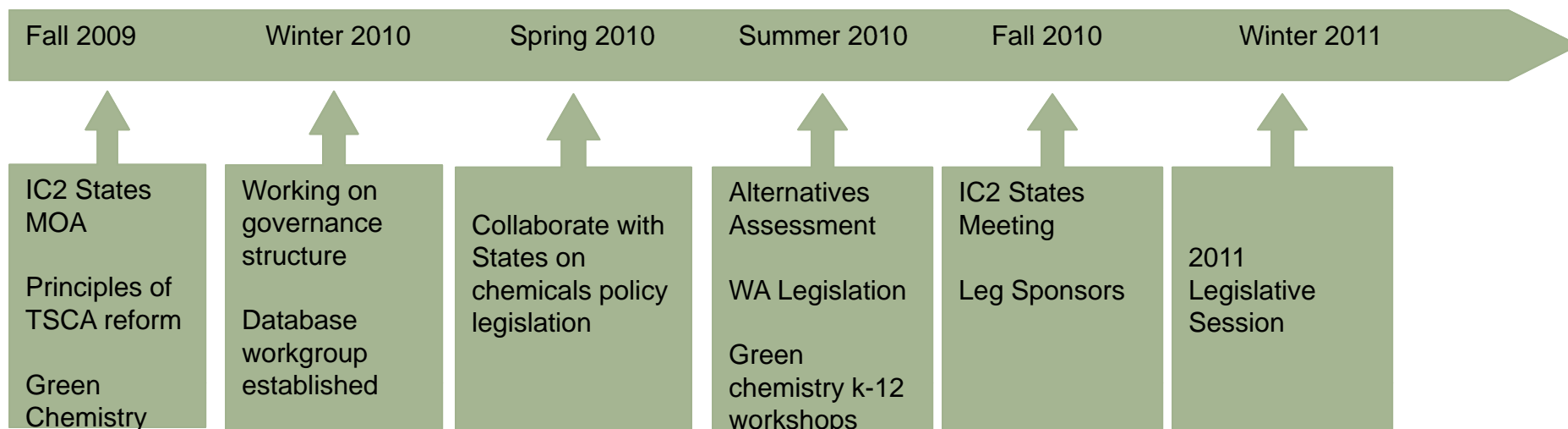
## Status

- Legislative report submitted
- Advisory Group position papers done
- List process completed
- List development underway

## Performance Measures

- 09-11 Development phase
  - Meet work-plan targets
- 11-13 Implementation phase
  - # of reports of 'toxic products', less is best
  - # of reporting violations, less is best

# Toxics in Products: States Collaboration on Chemicals Policy



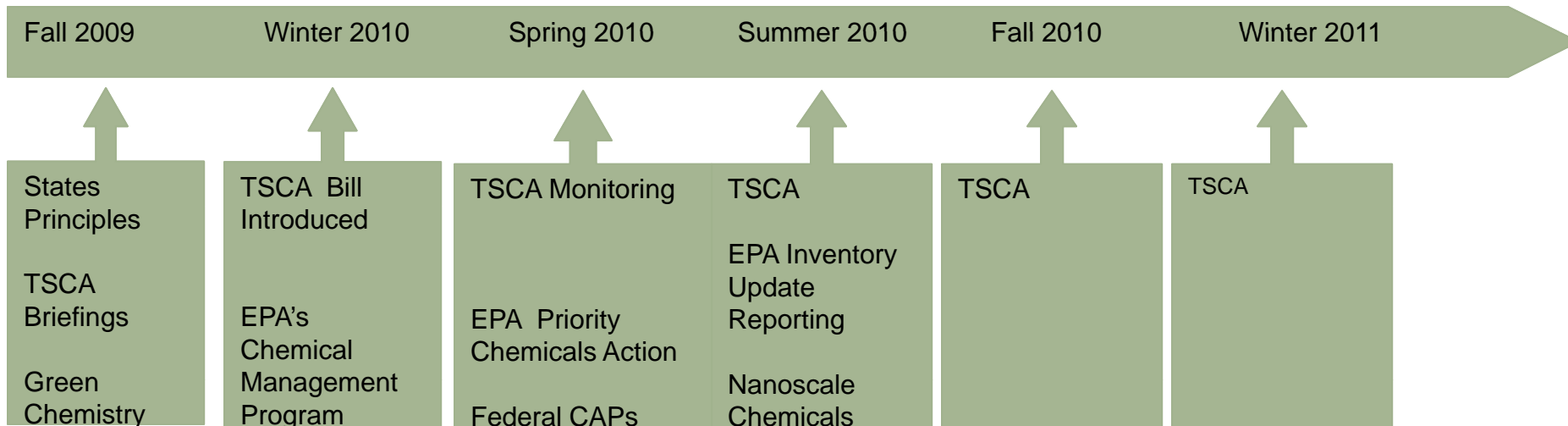
## Challenges/Opportunities

- Interstate Chemicals Clearinghouse
  - Initiate development of a database.
  - Advance safer alternatives.
  - High priority chemicals of concern.
  - Facilitate information sharing.
- Chemicals policy legislation
  - NPPR states collaboration
  - ECOS green chemistry resolution
- Partnerships
  - Green Chemistry Bullitt Foundation
  - K-12 Workshops

## Possible Performance Measures

- IC2 Work plan
  - Meet Work-plan Targets
- TSCA Reform
  - # of states with chemicals policies reform efforts
  - # of states that sign on to principles
- Green Chemistry
  - # of workshop attendees
  - # of teachers & students

# U.S. Toxics Substances Control Act Reform



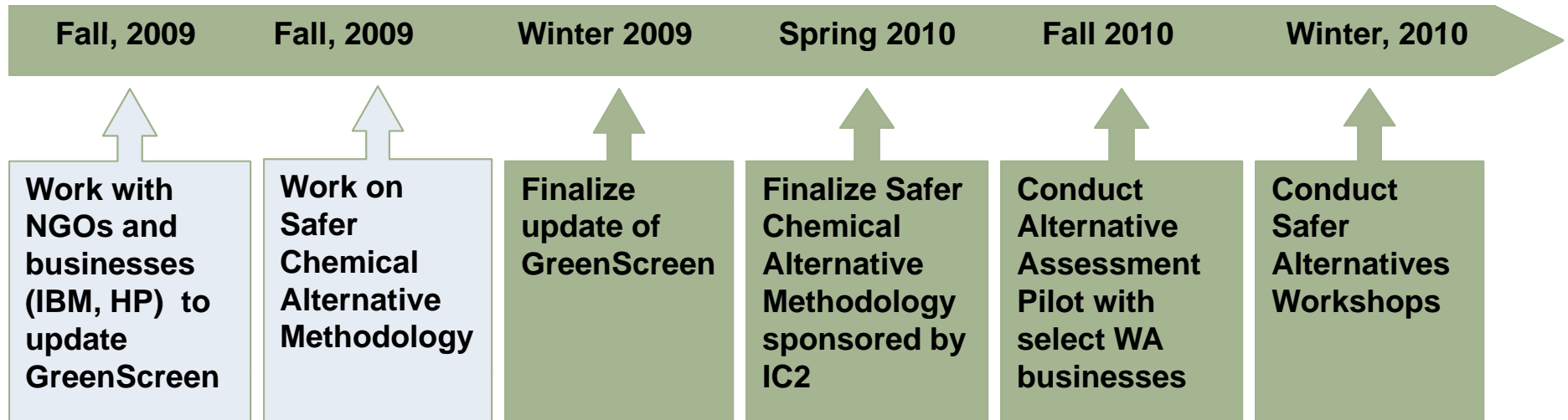
## Challenges/Opportunities

- States Chemicals Policy Principles
  - EOCS Commissioners Support
  - Need Communications Strategy
  - Need to educate state delegation
- Federal Legislative monitoring
  - TSCA bill progress
  - Federal Green Chemistry Act
- EPA Chemical Management Program
  - Risk Management
  - CAPs
  - Data collection
  - Public access/Stakeholders Process

## State Principles

- **Mandatory chemical data reporting.**
- **Demonstrate chemicals & products are safe.**
- **Prioritize chemicals of concern.**
- **Protect the most vulnerable.**
- **Safer chemicals & products.**
- **Emerging contaminants.**
- **Collaboration with States.**

# Toxics in Products: Safer Chemical Alternatives



## Opportunities

- Influence Green Screen Version 2.0
- Promote a consistent approach through coordination and collaboration with other states
  - Interstate Chemicals Clearinghouse
- Promote the identification of safer alternatives to copper in brake pads

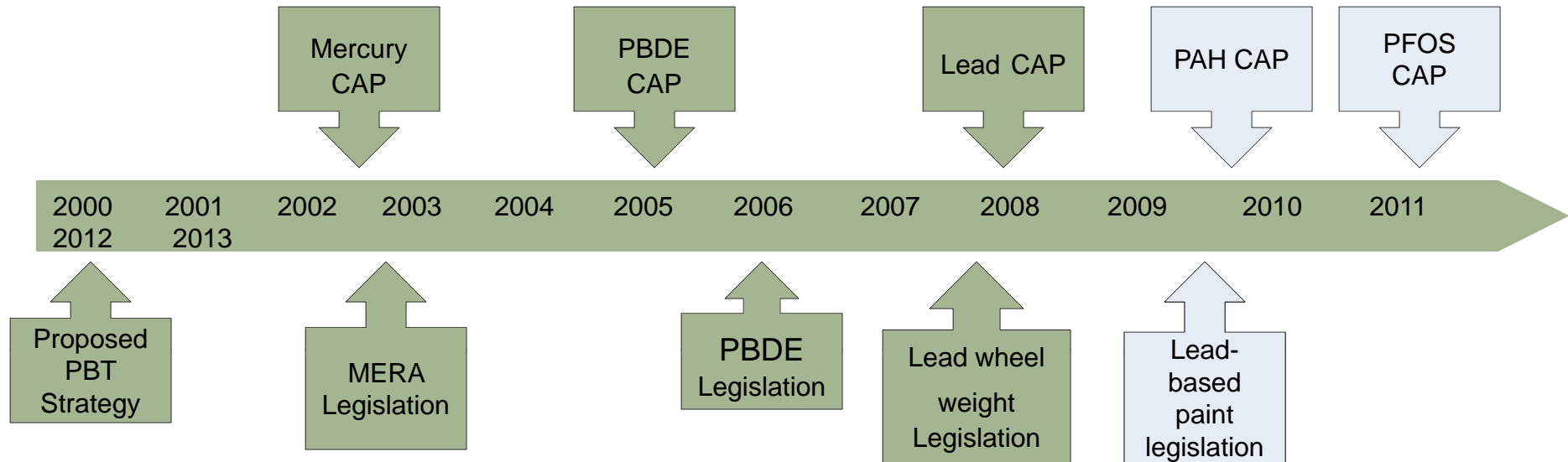
## Challenges

- Getting other States to contribute
- Getting final agreement on document
- Finding companies to work with under pilot

## Potential Performance Measures

- Method acceptance and application with specific examples
- Use by Toxics Reduction staff in Pollution Prevention Plans
- Use by Legislature as approved methodology

# PBT Chemical Action Plans



## Challenges/Opportunities

- Lead-based paint legislation
- EPA rule on renovation in pre-1978 units in affect April 2010
- National mercury repository
- Funding for implementation
- Toxics Loading Study for Puget Sound

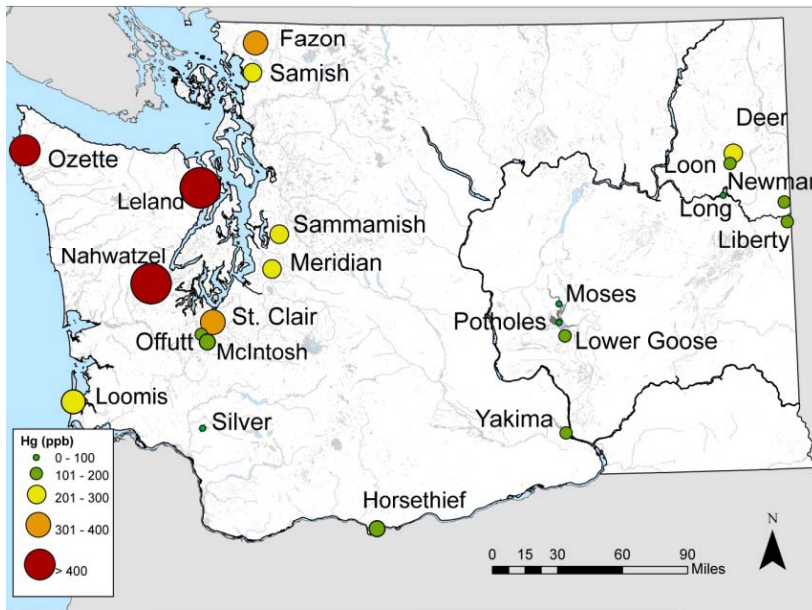
## PBT Successes

- PBT rule
- 14,000 lbs mercury collected
- Alignment with existing programs
- PBDE ban
- Lead wheel weight ban
- Monitoring program ongoing

# PBT Chemical Action Plans

## Mercury

- We have collected 14,300 lbs of mercury since 2003.
- We are targeting the collection of an additional 1,900 lbs by the end of the 09-11 biennium.
- Report to legislature with recommendations for light bulbs in December 2009
- Follow up on question about if TSDs are tracking mercury reductions



Why it matters: Concentration of mercury in standard size bass at trend monitoring sites between 2005-2008.

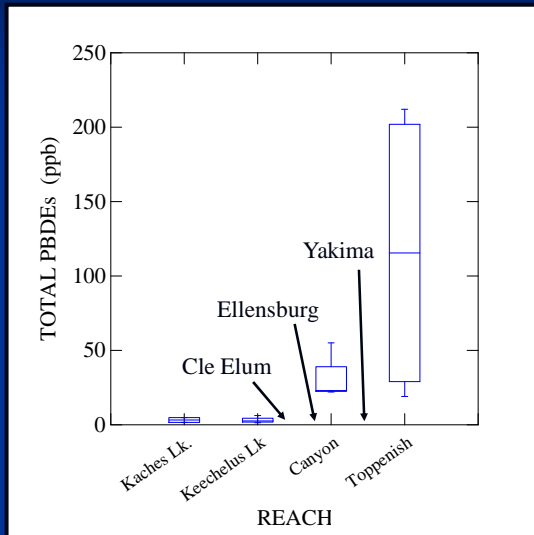
Product Bans	Total Collected/ Prevented
Thermometers	3,030 lbs.
Manometers, Barometers	2,838 lbs.
Schools K-12	2,600 lbs
Phase Out	Total Collected/Prevented
Hospitals	2,300 lbs.
Medical Waste	170 lbs.
Mining	169 lbs.
Thermostats	125 lbs.
Auto Convenience Switches	100 lbs.
Utility Switches & Relays	113 lbs.
Collect & Recycle	Total Collected/Prevented
Button Cell Batteries	54 lbs.
Fluorescent Lamps	330 lbs.
Dental Amalgam Waste	1,811 lbs.

# PBT Chemical Action Plans

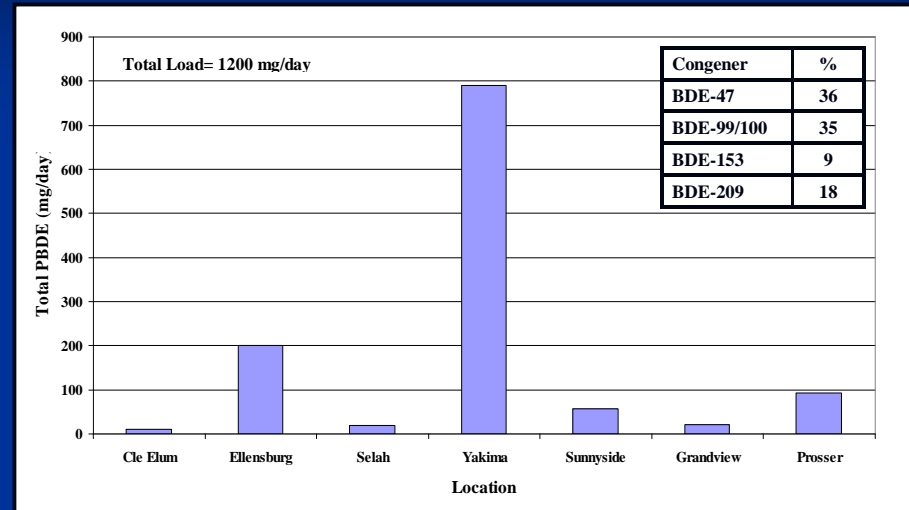
## PBDEs

- Jan. report to Legislature on alternatives in TVs, Computers and residential upholstered furniture
- The ban on manufacture of these items containing Deca will become effective January 1, 2011.
- PBDEs in fish tissue and wastewater in the Yakima River

### Yakima River Total PBDEs in Fish Fillets



### Total PBDEs in Municipal Effluent (mg/day)



# PBT Chemical Action Plans



## Lead

- Main recommendation from the Lead CAP
  - Require assessment of lead-paint hazards in pre-1960 rental homes; and
  - Require remediation in rental homes after a child is poisoned.
- Implement lead wheel weigh ban (effective Jan. 1, 2011)
- Support use of safer alternatives in other lead products

## Proposed performance measures

- number of children tested
- number of children with elevated blood lead levels

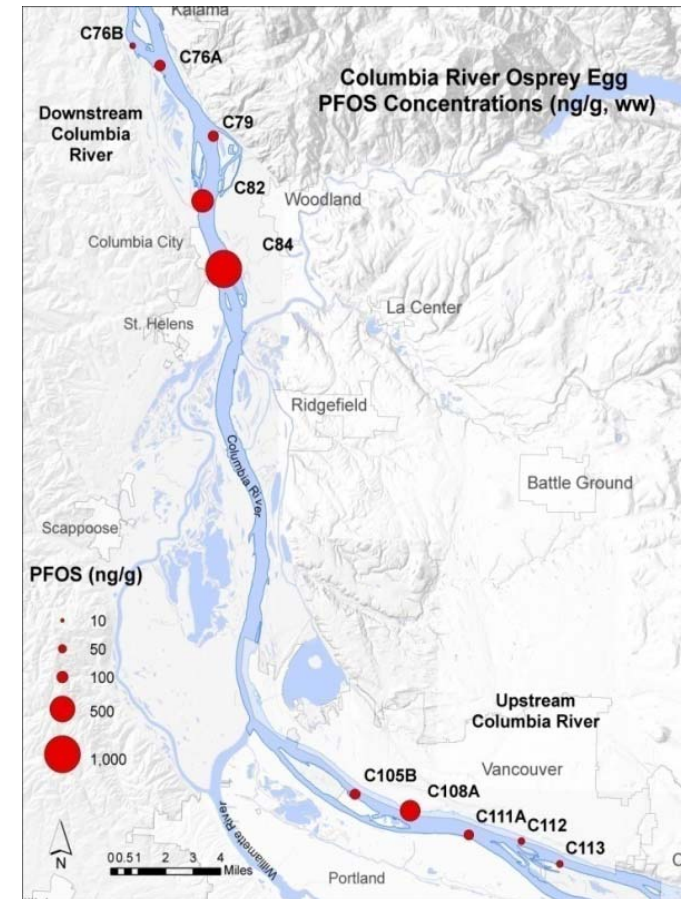
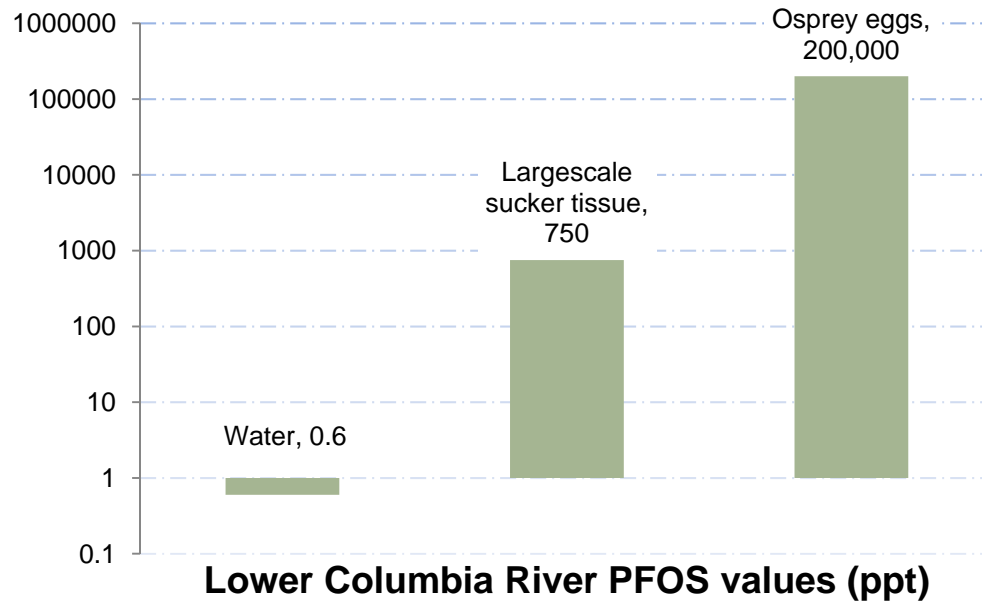
## Polycyclic Aromatic Hydrocarbons (PAHs)

- This year focus on PAH loading in Puget Sound
- Next year write a complete CAP
- Focus is air deposition and sediment levels
  - Wood and petroleum sources

# PBT Chemical Action Plans

## Perfluorinated Compounds (PFOS)

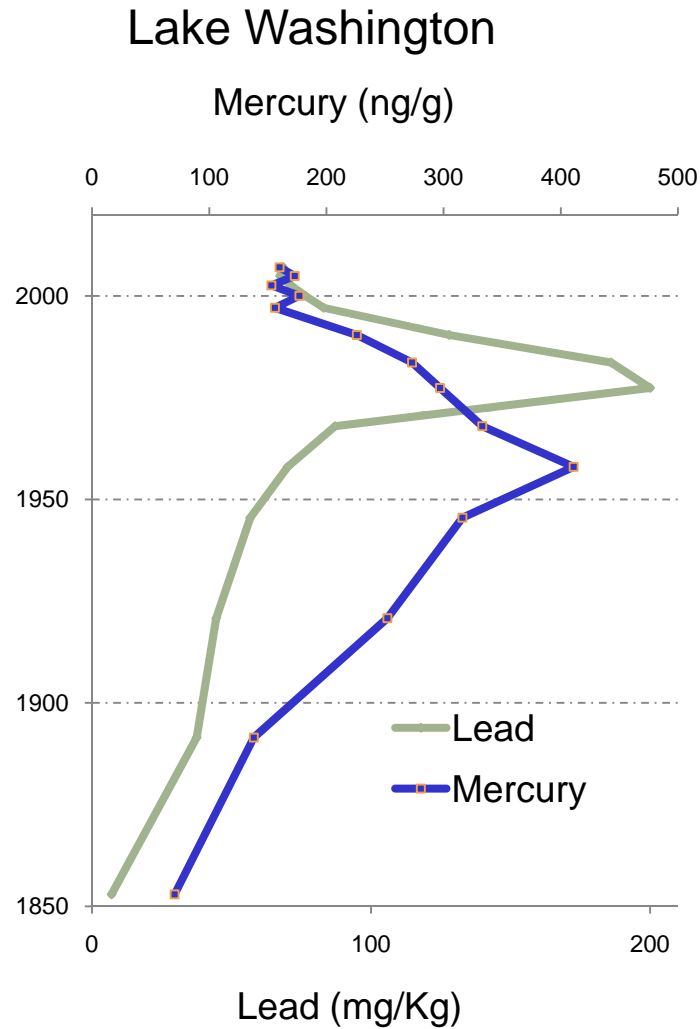
- Highly bioaccumulative contaminant
- Few states have data
- Baseline studies in surface waters, fish tissues, and wastewater for CAP development
- Osprey eggs in the Lower Columbia River



# Toxics Monitoring

- Baseline
  - Establish baselines and background
    - Enables trend measurement and TMDL support
- Trends
  - Focus sampling in impacted areas
    - Spokane River PBDEs; Lake Ozette Hg
    - Passive samplers for PBTs (SPMDs)
  - Tools – Cores/SPMDs
    - Historical trends analysis with cores
    - Hg and Pb
- Focused studies
  - Effectiveness monitoring
  - Toxics loading project
  - TMDLs

# Toxics Monitoring



Sediment Cores from  
Lake Washington



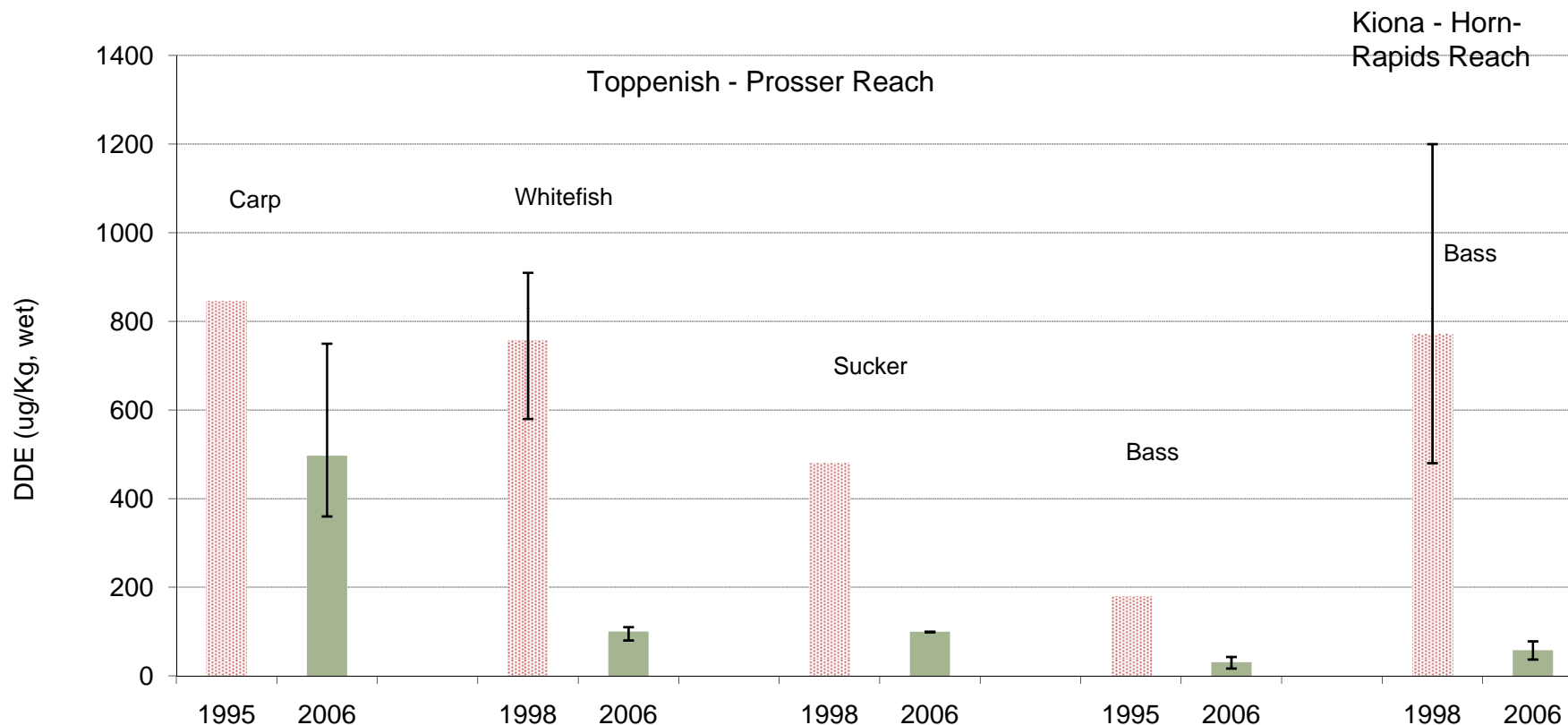
SPMD - Semi-permeable membrane device – passive sampler that allows PBTs to accumulate from water

# Toxics Monitoring- Success Stories



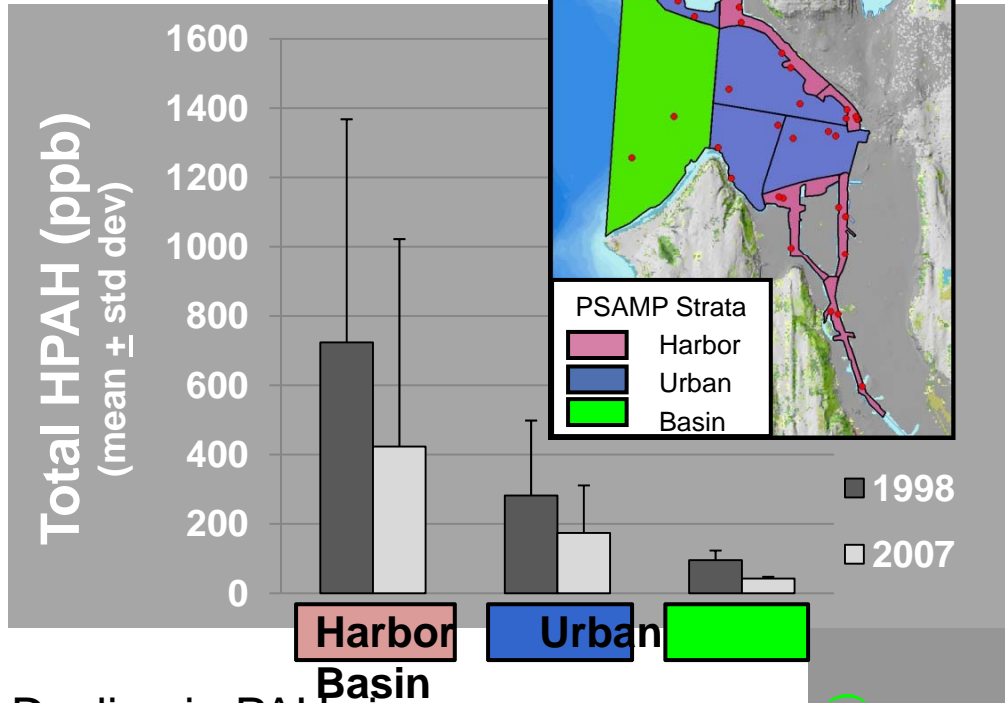
- Yakima – drip irrigation BMP
  - DDT reductions in fish
  - DOH lifts consumption advisory
- Elliot and Commencement Bay PAH declines
  - Linked to decreased tumors
- Spokane River – cleanup and source control
  - Sediment cleanup – lead, PCBs
  - Industrial discharge – Kaiser discharge reductions

# Yakima River TMDL



- TMDL identifies elevated DDT in fish
- Drip irrigation initiated by growers
- DOH removes fish consumption advisory for select species

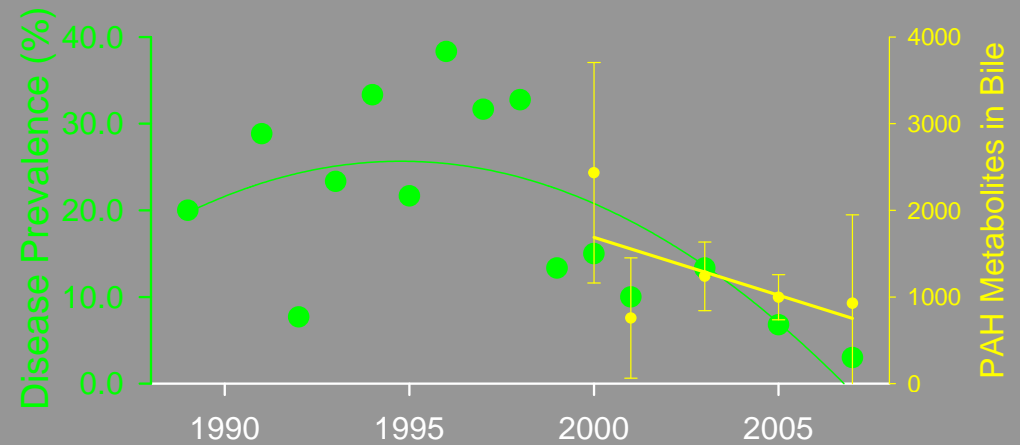
# Elliott Bay



Decline in PAHs in sediment



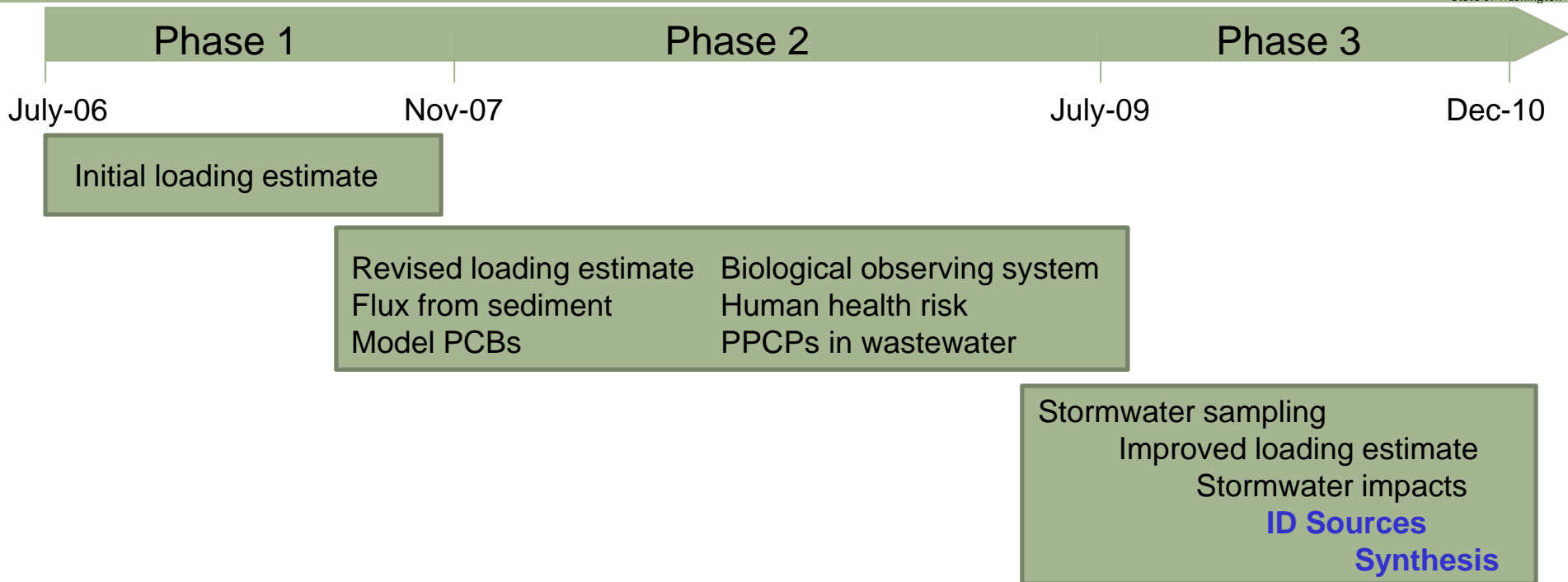
Decline in fish tumors



## Toxics Monitoring – Next Steps

- Continue monitoring priority contaminants
  - PBTs and other emerging contaminants
- Out of the forests and into Walmart
  - Need info on consumer products to support move towards source control
  - Avoid working backwards
    - Detection ►► exposure ►► health concern ►► regulation ►► alternative
- More effectiveness monitoring

# Puget Sound Toxics Loading Study: Foundation for a Reduction Strategy



## Challenges/Opportunities

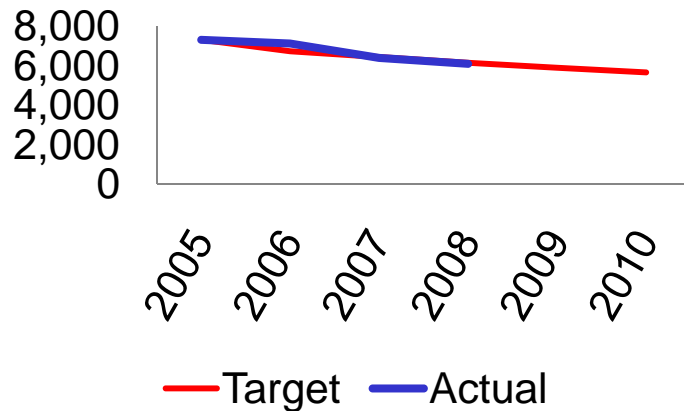
- Estimates of loadings are just a beginning
- Relative contribution of pathways and land uses is key
- Diverse information being collected by various agencies
- Tying loadings, pathways, land uses and impacts together - synthesis

## Possible Performance Measures

- Identification of priority toxics, pathways and sources
- Sound-wide toxics reduction strategy

# Reducing Toxic Diesel Emissions

## Tons of Diesel Emissions/year- Statewide



### Accomplishments

- Clean Fuels: 2006 – 2016
- Clean New Engines: 2007 - 2014

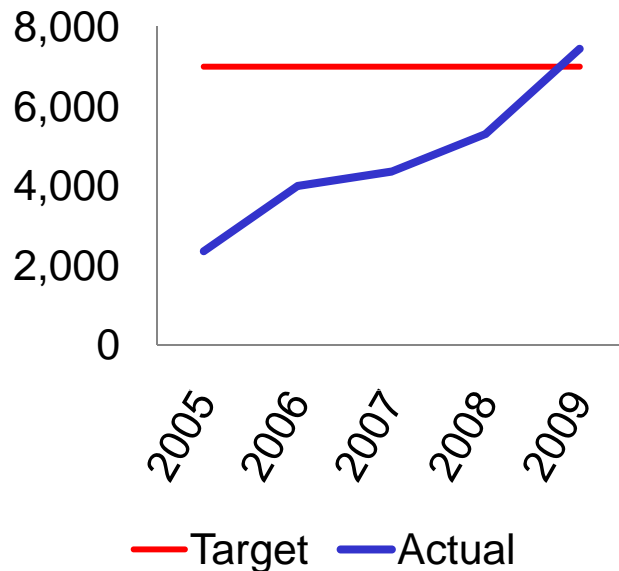
### Next Steps

- Clean-up “legacy” fleets - control technology retrofits, mileage improvement strategies, anti-idling programs and technologies, alternative power units, electrification

### Notes:

- Fleet turnover takes 30+ years
- Combination of fuels & new engine technology reduces per engine emissions ~90%

## Public Diesel Engines Retrofitted



### Accomplishments

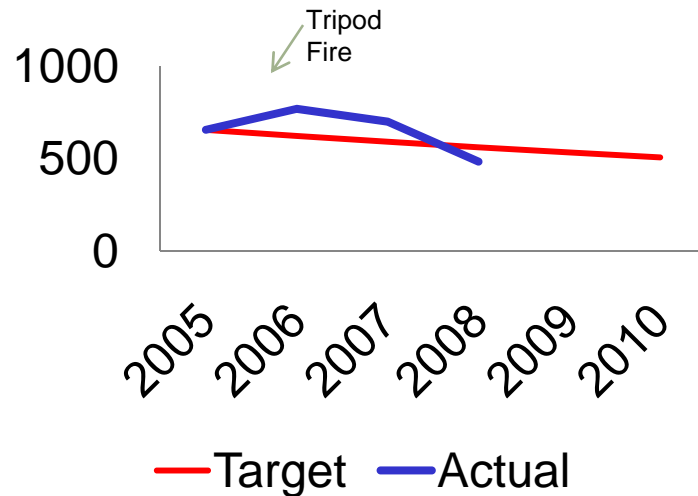
- Public Fleets: 10% of emissions
  - 10,539 retrofits on 7,447 engines
- Private Fleets: 90% of emissions
  - 48 anti-idling retrofits, including 14 locomotives.
  - 76 electrified truck stop spaces

### Next Steps

- Continue federal/state funding and retrofits for private fleets:
  - Those performing municipal functions and at toxic hot spots near ports
  - ~ \$4 million this biennium
- Requesting \$2.5M for Tacoma non-attainment area

# Reducing Toxic Wood Stove Emissions

## Measurements over “Healthy” Level



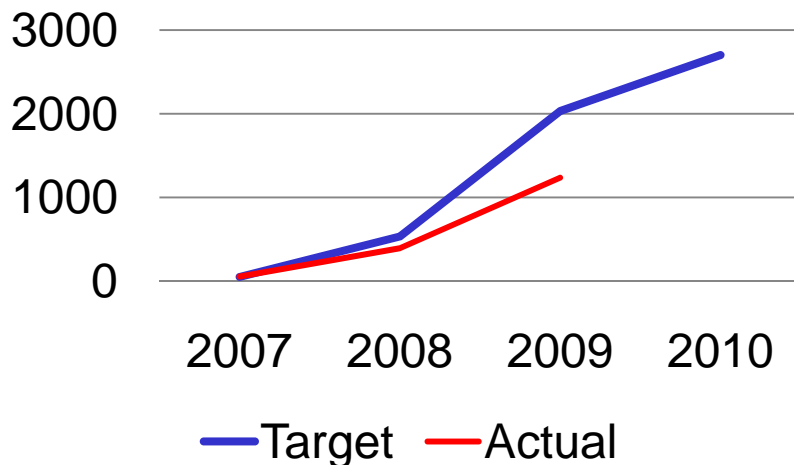
## Accomplishments

- Woodstove curtailment program in all jurisdictions with tighter criteria (2008).
- Woodstove change-outs for dirtiest units in high-risk communities.

## Next Steps

- Develop statewide clean burning education campaign - \$240,000 provided by 2009 Legislature
- Work with EPA to improve federal standards for new appliances
- Maintain/update state laws when necessary (ban on uncertified in nonattainment areas, outdoor boilers)
- Develop attainment plan for Tacoma

## Woodstove Change-Outs



## Accomplishments

- \$2.05 million granted in 07, 08, 09
- 1,236 change-outs (~\$1,650/replacement)
- Higher costs - focusing on high-use, low-income units in high-exposure communities

## Next Steps

- Awarded \$650,000 to Tacoma and \$300,000 to Yakima to start in '09/10 wood heat season:
- Requesting \$600,000 in 2010 for strategies in Tacoma nonattainment area.

# Toxics in Stormwater: LEVERAGING OUR CAPACITY



## TOXICS IN STORMWATER IS AN AGENCY ISSUE

All programs have a stake in it

How can we leverage our existing resources to prevent toxics in stormwater?

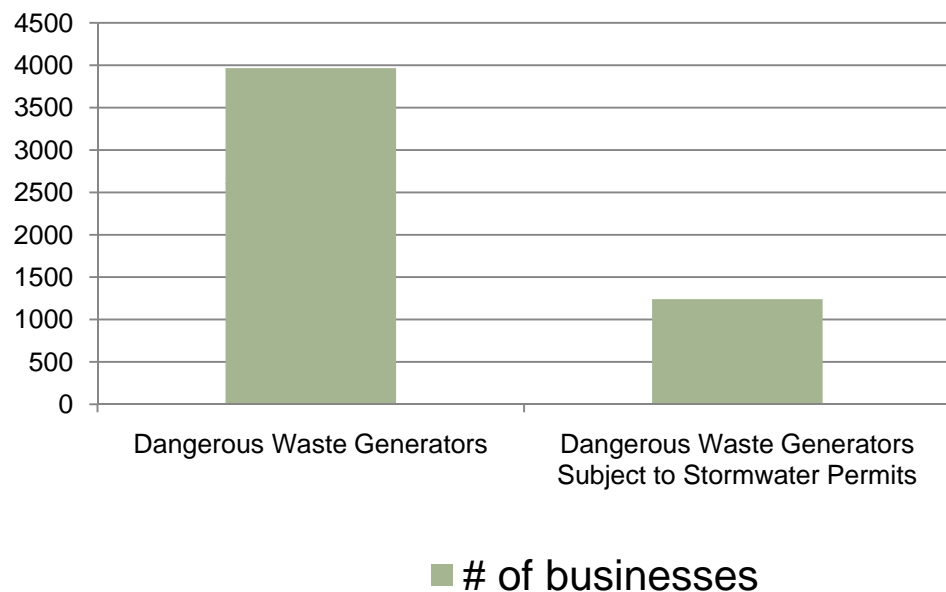
### Suggested approach

1. Task a multi-program work group to:
  - Review existing programs and authorities and recommend ways to leverage ongoing work to prevent toxics in stormwater
  - Review new National Estuary Program funding requests for proposals and recommend one or more prevention projects for funding
  - Prepare and submit the NEP grant application to EPA
2. Ban copper in brake pads

Next steps	Who	When
Convene work group	Carol Kraege	October, 09
Prepare copper brake pad bill	Rob Duff	Fall, 09

# Preventing Toxics in Stormwater through Local Source Control & Urban Waters Site Visits

## Comparing Dangerous Waste & Water Quality Clients



### Data Analysis

- Thousands of businesses with the potential to contaminate Puget Sound are not required to get stormwater permits.
- Local Source Control & Urban Waters inspections are a critical regulatory line of defense between millions of pounds of dangerous waste and stormwater contamination.
- 3,287 Local Source Control & Urban Waters inspections conducted since 2007.
- Nearly half of initial site visits have identified compliance concerns about haz waste, wastewater, stormwater or spills.
- Referral rate has dropped to 6%.

**Local Source Control Specialists = 15.5 FTE in 14 jurisdictions**  
**Urban Waters = 6 FTE in Commencement Bay (Tacoma); Lower Duwamish (Seattle); Spokane River Watershed + 2 EAP FTEs**