

## Appendix H- Response to Public Comments

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# Introduction

The purpose of the *Response to Public Comments* is to report on and respond to comments received by the Washington State Department of Ecology (Ecology) on the Draft Lead Chemical Action Plan (CAP). Comments were received by letter, fax, phone and e-mail during a 60-day comment period, from August 6th through October 6th, 2008. Also, written and oral comments were received during two public forums, in Seattle on September 16, 2008 and in Spokane on September 18, 2008, have also been included.

The purpose of the Lead CAP is to identify the dangers of lead, detail where this substance can be found in our environment and recommend ways to reduce its harm. Development of the Lead CAP is a multi-program, multi-agency effort with the involvement of external stakeholders. The Departments of Ecology and Health were assisted by seven other state agencies, the U.S. Environmental Protection Agency, and an advisory committee of 17 representatives of business, health, environmental, and local government organizations.

The Draft Lead CAP was made available to the public online as well as in printed form (Department of Ecology Publication No. 08-07-009). All comments were reviewed and considered carefully by both Ecology and DOH and changes were made accordingly in light of those comments. We appreciate the time and effort each commenter took to review the draft, develop comments and submit them. Many people included touching personal stories. It is obvious that the issue of lead in our environment is important to many of you.

Because of the large number of comments and their similarity, we did not respond to each comment separately in this document. Instead, we grouped comments into larger issues by identifying common themes. Some specific issues were addressed in the Final Lead CAP, but were not individually addressed in the response to comments. Quotes from some comments are included when they help represent or clarify an issue, but not every issue is accompanied by a quote. Acronyms used to identify an organization that commented are found in the list of abbreviations and acronyms. The issues and responses are organized in the same way as the Final Lead CAP. The references are not included in this appendix, but all the information, with references, can be found in the Final Lead CAP.

## Summary of Changes

There are many changes between the Draft Lead CAP that was out for public comment and the Final Lead CAP. Most of the changes were made to add new information or provide clarification. Our basic conclusions and recommendations remain the same.



# Acronyms and Abbreviations

BLL	Blood lead level	NRA	National Rifle Association
CAP	Chemical Action Plan	NSSF	National Shooting Sports Foundation
CPSIA	Consumer Product Safety Improvement Act	NWMA	Northwest Mining Association
CSPA	Children's Safe Products Act	PBT	Persistent Bioaccumulative Toxic Chemical
CTED	Washington State Department of Community Trade and Economic Development (now Commerce)	Pb	Elemental symbol for the element lead
DEL	Washington State Department of Early Learning	PEHSU	Northwest Pediatric Environmental Health Specialty Unit
DOH	Washington State Department of Health	PVC	Polyvinyl Chloride or vinyl
DSHS	Washington State Department of Social and Health Services	RCRA	Resource Conservations and Recovery Act
EBLL	Elevated blood lead level	RHA	Rental Housing Association of Puget Sound
Ecology	Washington State Department of Ecology	SAAMI	Sporting Arms and Ammunition Manufacturers' Institute
EPA	U.S. Environmental Protection Agency	TRI	Toxics Release Inventory
HUD	U.S. Department of Housing and Urban Development	WAC	Washington Administrative Code
HHW	Household hazardous waste	WDFW	Washington State Department of Fish and Wildlife
L&I/LNI	Washington State Department of Labor and Industries	WPSR	Washington Physicians for Social Responsibility
NPDES	National Pollutant Discharge Elimination System	WTC	Washington Toxics Coalition

# Commenters

Ecology received comments from representatives of the following businesses and organizations as well as nearly 900 individuals. Some commenters are categorized as anonymous because the individuals didn't identify themselves in the body of their email nor could their names be ascertained from their email sender IDs.

Commenters offered diverse opinions on the Draft Lead CAP. Again, we appreciate the time and effort each commenter took to review the draft, develop comments and submit them.

About 60% of the individual commenters, or around 550 people, identified themselves as a resident of Washington. 12 commenters identified themselves as coming from other states, such as Arizona, California, Connecticut, Florida, Hawaii, Oklahoma, and Pennsylvania. The remaining commenters, around 250, did not include their address or state of residence.

## Businesses/ Organizations

American Bird Conservancy  
Audubon Washington  
Biodiversity Research Institute  
Bremerton Trap and Skest Club  
City of Everett Public Works  
City of Spokane Community Development Department  
Clark Rifles  
Hunters Heritage Council  
The Lands Council  
Local Hazardous Waste Management Program King County  
National Rifle Association of America  
National Shooting Sports Foundation, Inc.  
North West Mineral Prospectors Club  
Northwest Mining Association  
NW Pediatric Environmental Health Specialty Unit  
People for Puget Sound  
Public Health-Seattle & King County

Rental Housing Association of Puget Sound  
Safari Club International, Central Washington Chapter  
Safari Club International, Inland Empire Chapter  
Skagit Audubon Society  
Sporting Arms and Ammunition Manufacturers' Institute, Inc.  
Tacoma-Pierce County Health Department  
Tri-Cities Metallic Shooting Silhouette Association  
Washington Department of Fish and Wildlife  
Washington Department of Labor and Industries  
Washington Physicians for Social Responsibility  
Washington State Nurses Association (WSNA)  
Washington Toxics Coalition  
Washingtonians for Wildlife Conservation  
West Coast Shot Inc.  
Westport Charterboat Association  
Yakima Rifle and Pistol Association

## Individuals

David Abbot	Connie Berger	Zack Carmichael	Dan Covell
Richard Abbott	Paul Bergman	Dave Carpenter	Art Crane
Fred T. Adams	Marilyn Berko	Ken Carpenter	C. Clare Cranston
Nicole Adams	Al Berlat	James Carpenter	Gary R Crawford
Chad Alexander	Mike V Berriochoa	Scott Carpenter	Scott Creek
Joseph Alexander	Sheila Berry	Aaron Carr	Mark Crispin
Brigitte Allen	Jonathan Betz-Zall	George Carr	Charles Crissman
Dr. Paul Allen	Dr. Joseph John Bevelacqua	Dan Cantrell	Kim Cross
Kathleen Allen	Robert Birney	Michael W. Carson	Jim Crowle
Tom Allman	Bill Bishop	Amy Carter	Therese Cushing
Kerri Altom	Emily Bishton	Gabriela Carvalho	Anne Daletski
Robert Amburgey	Richard Blount	Norris Carver	Chris Dallman
Timothy E. Anable	Dena Blue	John Casapiedra	Sue Danver
Beth Anderson	Jeannie Boag	Ron & Sandy Casscles	Ron Davidson
Diane Anderson	Brian Boardman	Deborah Casso	Anna Davis
Eric Anderson	Joseph Bobovsky, MD	Goldie Caughlan	Robert Davis
Kimberly Andrews	W. Loren Boes	Sharon Chen	Don Davies
Noel Angell	Richard Bogar	Chenelle Robert	Paul Davis
Ray Antonsen	Susan Boling	Chris Cherry	Randie Davis
Barry S. Aoki	Sam Bolinger	Jennifer Chialfalo	Mr. & Mrs. Lawrence
Michael Archibald	Raymond Borbon	Sue Chickman	Dawes
Meagan Arndt	Len Bordeaux	Allen J. Chinn	Jim Dawson
Carl Arnold	Chris Bosted	Alan Christensen	David Day
Weldon Arnold	Michael Bowens	Kimberly Christensen	Bob Decker
David Attwood	Kayla Bozoti	Walter D. Christiansen	Melissa Degregorio
Dave Avis	Lyman Bradley	Steven B. Christian	Joe DeGroat
Jeff Ayres	Paul Brainard	Thomas Christian	Kenneth Delanoy
Dave Baalman	Joseph M. Bredstrand	David C. Christie	Mike Denall
Roger Bachman	Roberta Bremson	Joseph Ciesielski	Stephanie Delleve
Frank I Backus, MD	Lynn Brevig	Brian Cieslar	Ned Dillman
Wallace Bacon	Todd Brightbill	Dick Cinkovich	Marcie Dingserson
Fred Baier	Peter Brinsek	Bruce Clapp	AC Dodd
Steve Baima	Rachel Broderhausen	Todd Clark	Joe Dodd
Larry Baker Jr.	Christina Bronk	Nancy Cleminshaw	Jennifer Dold
Glenn Baldwin	Diane Vanden Brook	William Clifford	Cindy Dominguez
Paul R. Bammert	Dan Brower	Kristen Clifton	G. Donahue
Leigh Bangs	Dan Brown	Rex A. Clinton	Rick Donohue
Ron Barchi	Elisa Brown	Michelle Clinton	Gene Dotson
Howard Barnes	Gary Brown	Harley Coates	Paulette Doulatshahi
Sgt Peter A. Barnes	Neal Brown	Jamie Coates-Robertson	Maurice L. Drumm
Chase Barton	Tom Brun	Ian Coen	Suzanne Duley
Beaux Bartron	Victor Buchanan	Patricia Coffey	Suzanne Duncan
Larry Baum	B. Buckwalter	Tony Collette	Michael J Dunn
Gil Bayless	Paul Bunn	Gretchen Colonius	Kevin Eager
Randall Bayuk	Mickeal Burgess	Mike Conlan	Dee Dee Eaton
Travis Beck	Bob Burkholder	Pat Conrad	Greg Eckert
Leo Beer	Dylan Burns	Thomas Conrads	Marianne Edain
Amy Beliveau	Melissa Burns	Richard Conserriere	Ed Edmiston
Jeffrey Bell	Scott Burns	Ray Conwell	John Edwards
Mike Bell	Dan Burton	Dave Cook	Lynn Edwards
Tamara Bell	Roberta Butler	Dale Coppess	Frederick Elkins
Michel Bellamy	John Byczynski	James Cornaggia	Carrie Ellis
Rick Benefiel	Larry Byrne	Kelly Cornell	Sandra Emerson
Tom Bennett	Scott Callan	John Corney	William Joseph Emerson
Irene Bensinger	Allen Campbell	Dana Keller Cornie	PE Engelking
Catherine & Michael Benson	Rebecca Em Campbell	Bob Couch	Pamela M. Englert
David Benson	Frank Champion	Dan Coursey	Wade Erickson
Ashley Berg	Laura Campos	Josh Courtney	Shannon L. Ericsson

Jennifer Eveskcige	Robert + Julie Kenny +	Dale Herling	Roger A. Jutte
Liza Ewell	Glover	Wendy L. Hernandez	Carol Kassner
Vernon D. Ewer	Marcy Golde	Stephen Herron	Chris Kastella
Jim Fagerlie	Jim Goldsmith	David Heywood	Garry Keevy
Dean Fay	Kristin Gomez	Bobbi Hickox	Cynthia Kelling
Kellie Fay	Howard Goodman	Bob Higbie	Rick Kemman
Daniel Felton	Robert Gore	Harold P. Hill	James W. Kennedy
Michael Fester	Joan Gould	Sandy Hillock	Gerald Kern
Eric Fickeisen	Shilah Gould	Hilstad Family	Keith Kidwell
Tanya Fields	Joe Granger	KW Hipps	Brian Kilroy
Rubylee Findley	Betsy Grant	Amie Hirsch	Ron Kimmel
Howard Finke	Karen Grant	Jennifer Hisrich	Carl King
Greg Fiorentino	William Graves	Keith Hixson	Mathew King
Eric Fisher	David Griffin	Jana Hobbs	Randy King
David Fleming	Jeff Groshells	Dwight Holmes	Susan Kinoshita
Chad Force	Barbara Gross	Joel Hoffman	Michael Kirsch
Mary Ann Ford	Peter Gross	Greg Hogan	Rick Kiser
Ted Foshaug	Ravi Grover	Stephen Holtz	Jon Klug
Fred Foster	Arthur Grunbaum	Dave Hood	Raymond L. Knight
Roger M. Foszcz	Ron Gschwend	Tim Hood	Mary Koehler
Pat Fowler	Charles Guenther	Teresa Hopkins	Stephen Koepf
Steve Fowler	Susan Gundy	Janelle Hopper	Shirley Koining
Shannon Fowler	Darrin Gunkel	Tom Hopper	Joyce Kormanyos
Cat Fox	Dorothy Guth	Lance Howard	Stephen Kozer
Chuck Fox	Anne Guthrie	Laura Huddlestone	Bryant Kramer
Larry Fox	Barbara Guthrie	Edward Hueneke	Helen Kramer
Leslie Francis	Mike Haakensen	Michael Huffman	Theodore M. Krauss
Dan Frank	Phyllis Haaland	Nick Hughes	John Kraynak
Louise Franklin	David Habib	Charles Hurt	Elinor Kriegsmann
Tim Franks	Dan Hagan	Don Imhof	Melanie Kristoferson
Amy Fraser	Rod Hagel	Gary Inman	Michael Kucher, Ph.D.
Steve Friend	Margot Haggard	Carl A Isom	Prem Kumar
Rona Frimmer	Hooker Hailstone	Stephen Iszler	Allen N. LaCombe
Gordon S Froese	Jennifer Halos	Joy Jaber	Rachel Laderman
Scott Fromme	Chester Hamilton	Erin Jackson	Brock Laffoon
Sean Fry	J K. Hampshire	Richard Jacobson	Tai Lahans
John Fulkerson	Dave Handa	Diana Jain	Ray Lam
Heather Fulmer	Mark Haney	Sandi James	T. F. Lambert
David Fyffe	Herb Hardin	Loretta Jancoski	Kevin Lampshare
Aileen Gagney	John Harding	Tim Jarboe	Greg Lane
Michelle Gaither	Leah Eister Hargrave	Phil Jarmer	George Lanphere
Chad Gallauer	Thomas Harrington	Craig P. Jenkins	R A Larson
Olaya Garcia	Howard Harrison	Ronald Johanson	Jeff Layman
Fred Gardner	George Hart	Don Johnson	Erik Lease
Sam Garst	Candice hartmann	Jeff Johnson	John H. Lecky, M.D.
Blaine Garver	Stephen Harvey	K.B. Johnson	Greg Lehman
William K. Gaylord	Bob Haskins	Nancy Johnson	Fran Lemieux
Jerry Genschorck	Jeff Hastings	Ron Johnson	Larry Leone
Herb Gerhardt	Margie hatter	Samuel Johnson	Peggy Leviton
Allen S. Gerth	Ken Hecker	Wilbur Johnson	Ken Lewis
Harvey Gertson	Nancy Hecox	David H. Jones	Richard Lewis
Sara Giammanco	J. Hedel	David Jones	Sarah Leyrer
Jerry Gibbs	Bruce Hedlund	Don Jones	Lars Liden
Joseph Gilbert	Sue Heffernan	Sandra Joos	Nancy Lill
Kathleen Gill	Elaine Heinz	Martha Jordan	Ole Lindbo
Greg Gipe	Emil Heinze	Jennifer Joseph	Karen Sampson Liu
David Gladstone	Bruce L. Heller	Scott L. Jouppi	Emily Livengood
Dennis Glatting	Steven Henigson	Fred Jung	Mark Lloyd
Michael J. Glaze	Vic Henry	Barbara Jurgens	Austin L. Long
Jim Gleckler	Mark Herke	Richard Justice	Priscilla Long



Shane Loper	Jeff Moore	Steve Pegram	Savahn Rosinbum
Ruth Lorenz	Rita Moore	Betsy Pendergast	Joe Rotter
Randy Loun	Dave Morel	Kim Pendergrass	Harriet Round
Nancy Lovejoy	Joe Moreland	Kert Peterson	Paul Rucker
Bob Lovett	Andrew R. Morgan	Steve Pew	Bill Rupp
Elise Lufkin	Robert J. Morris	Anne Phillips	Randolph Russell
Lis Lutz	Robert Morris	Farrell Phillips	Daniel A. Russie
Samuel Lynn	Stacy Morse	Gregory Pickles	Tom Ryan
April Lynskey	John Moulton	Robert Pierce	Ivy Sacks
Don Mac Adam	Joe Muller	Cynthia Pikoulas	Jack Sadler
B.C. Macdonald	Jim Mulligan	Emanuel Plotnikov	Andrew Salter
Janneth Macellari	Jerry Mullin	David Poling	Ron Sanders
Julie MacGillis	Joe Munn	Mary Porter-Solberg	Tom Schiel
Steve Mack	Chet A. Munro	Randall Post	Carl Schiffeler
Laurence Maddux	Patricia Murphy	Rob Potter	Rich Schlachtaer
Edward Maher	Peter Mussen	Gary Powell	Linda Schmid
Glenn Maiers	Naomi Nachun	Kendra Powell	Andreas Schoderer
Ann Manly	Bruce Nash	Nicole Powell	Richard Schoening
R. A. Margulies	Diane Nash-McFeron	Terrance L. Powell	Tera Schreiber
Cathy Marinella	Brent Naylor	George Poysky	Ernst Schubert
Chadwick Markel	Brad Nelson	Chuck Prater	Ray Schueler
Karl E. Markin, M.D.	Iral Nelson	Steve Prentice	Mike Schutt
Phil Marshall	Mike Nesbitt	Jason Preston	Dorene Schutz
Charles Martin	Vi Nguyen	Stephanie Priest	David Schuurman
Margaret Louise Masar	Gary Nielsen	Janet Primomo	Don Scoby
Nicholas B. Mason	Ralph Noa	Pam Pritzl	Chris Scott
Paul Matheson	Ruben Nolf	Craig Probst	Justin Scott
Herb Maxey	Mary & Dave North	Chelsey Putera	Jim Scott
Jim May	Jeff Oakland	Lawrence C. Pyzik	Jane and Eric Seibel
David S. McArthur	Maura Obrien	Clyde Raines	Emilio Serrano
McCauley	Michael O'Brien	Mark Ramberg	Lisa Sezate
Jeremy McClanathan	Erin Ocegueda	Jeff Rambo	Richard G. Shaffer
Greg McDowell	Sharon O'Hara	Donna Raven	Lisa Sharp
Jim McEntire	David Ojima	David Rawson	Rosemary Sharpe
Vern McGhan	Tom Olsen	Michael Ray	Corey R. Shearer
John McGregor	Keith M. Olson	Vincent W. Reagor	Joan Shelby
Patricia McHugh	Lynne Olson	Jennifer Redwine	Patrick Sherritt
Sean McIntyre	Joy Onasch	William Reece	Clark Sherwood
Leah McManus	Micheal Orskog	Art Reid	Daniel Shier
Matthew Mcwherter	Marcus Ortiz	Rick Reitmeyer	Richard Shipley
Martha Means	Susan Overback	Becky Rhoads	Tom Shofner
Tiffany Megargee	Michael Overfield	Charles Rice	Forest Shomer
A P Meikel	Jim Overton	Bryan L. Rich	Odis Sikes
Mikhail Merkurieff	Richard Owings	Clayton Richardson	Wade Silk
Andy Mesojednik	Ray Ownby	Donald Richardson	Bryon P. Sims
Marypat Meuli	Robert Pace	Galen Richardson	Paul Sims
Robert Meyers	Elaine Packard	GM Ricka	Wanda Sims
Klaus Meyn	Don Paladin	Charles D. Robbins	Vanessa Simshauser
Steven Miale	Bernie Panitch	Richard Roberge	Sherelle Sinko
Doug Mielke	John Paquin	Rod Robert	Rob Skeens
Richard Mikita	Steve Parcel	Cal Roberts	Gloria Skouge
Charles Milender	Gershon Parent	Chenelle Roberts	Anthony W. Slatcoff
Jerry Miler	Michael Parker	Shane Rossen	Aaron Smith
Harry Miller	Veronica Parker	Douglas Robertson	David B. Smith
Ken Miller	Tamara Parrott	Jim Robertson	Gary Smith
Kip Miller	Sharon Parshall	Kristina Rodden	J. Smith
Les Miller	Charles Patten	John B. Rodgers	Diana Smith
Mike Moehnke	Atsuko Patzwald	Richard Roos	Tammi Smith
Charles Mohseni	Jean Pauley	Michael Rosenberg	Trevor, Reagan, Paisley, & Charley Smith
Heather Moore	Julian Pavesi	Raymond D. Rosenthal	

Nancy Snow  
Nancy Snyder  
Phil Sohn  
Laurie Solomon  
Margaret Sonnen  
Shirley Sonnichsen  
Don Spencer  
Douglas Spencer  
William R. Sporcich  
Chris Stay  
Heather Stearns  
George Steed  
Linda Stein  
Harald Stenger  
James M. Stennett  
Tom Stephens  
Sharon Stevens  
Douglas Stevenson  
Jacqueline Stevenson  
Jan Stewart  
Scott Stickney  
Terri Stilson  
David Stitzhal  
Adrian Stogin  
Julie Strandquist  
David Straub  
Eycke Strickland  
Fred Struck  
Mike Stuhr  
Greg Swank  
William Swanson  
Joe Swenson  
Mary Swirsky  
James Sykes  
Craig Talbot

Tony Tamaccio  
Gregory Tannheimer  
Joyce Tattershall  
Bruce Taylor  
Ricky Taylor  
Stan Taylor  
Tim Tennessen  
Zach Thomas  
Ben Thompson  
John Thompson  
Mike Thompson  
Shelly Thorn  
Thuy Vi Nguyen  
George Tippner  
Sharona Tocco  
Barbara Tombleson  
Patricia Tomlin  
John Tompkins Sr.  
Allison Torgesen  
Steve Tormala  
Sal Tramaglino Jr.  
Matthew Trent  
Lou and Joan Truskoff  
Olaf Trytten  
Dan Tucker  
Kathi Turner  
Scott Turner  
Evette Twyford  
Keith Tyler  
Selim Uzuner  
Jody Vajko  
James Van Wingerden  
Pete VanderWegen  
Kyle Vanek  
Shari Vanenkevort

Eugene Vanover  
Genevieve Vayda  
Conrad J Verpoorten  
Merrill Vesper  
Rob & Carrie Viens  
David L. Vigen  
Marci Villanueva  
Kristopher Vogel  
Mark Vucelick  
Joyce Ward  
Stuart Ward  
Gail Waser  
Alysha Waters  
Patricia Waterston  
LeRoy A. Watson, Jr.  
Ron J. Webb  
D.E. Weber  
Scott Webster  
Miranda Wecker  
Bruce Week  
Paul Weir  
Pete Weller  
Eve Wellington  
Gail Werner  
Joanne Colman Wester  
Mathilda Wheeler  
Leonard Whitney  
Den Mark Wichar  
David Wick  
Jane Wiebe  
Gary Wiggins  
Elaine Willey  
Dick Williams  
Jay Williams  
Jim Williams

Kenneth Williams  
Mike Williams  
John Willis  
David Willson  
Jerry Wilson  
Keira Wilson  
Sheila Wilson  
Greg Winchell  
Marguerite Winkel  
Charles Winters  
Sydney Wissel  
Beth Wofford  
Esther B. Wolf  
Rebecca Wolfe  
Glenn Wong  
Gordon Wood  
Michael Wood  
Dave Workman  
Bruce Wright  
Jim Wright  
Josh Wright  
Donna Yancey  
Peter Yocom  
Heidi Zamzow  
Olga Zharkova  
Jerald F Zierdt  
Robert Zimmerman  
Matt Zublic  
Jon Zurit

# Responses to Issues Raised by Public Comments

## General Issues

- 1. Issue: Several people had comments and suggestions about specific phrasing as well as the organization of the report.**

Response: Ecology considered these comments and made changes where appropriate to clarify the report.

- 2. Issue: We got many comments on the options as if they were the recommendations. In addition, many people stated that some options should not be considered at all.**

Response: Because the separate options chapter was confusing to many people, it was deleted and options that we considered are now briefly listed before each recommendation and discussed in more detail in the rationale.

Part of the process of developing a CAP includes considering a wide range of options, even options that are not favored by Ecology or other interested parties. According to the PBT Rule (WAC 173-333), a CAP should contain a wide range of options including no-action, an option that results in the phase out of PBT uses and releases, an option to manage chemicals to reduce exposure, and other options, including the use of available alternatives.

- 3. Issue: Several people sent us additional information to include in the Final Lead CAP.**

Response: We added and removed information based on both the comments we received and new reports and regulations that came out after the Draft Lead CAP was written. We only added or removed information if we could verify it. See the response to **Issue 7** about sources of data.

An example of information that came out after the Draft Lead CAP was written and that was mentioned in several comments is the June 2008 DOH panel on childhood blood lead testing. A summary of this panel and its recommendations was included in the Final Lead CAP in Chapter III on health effects.

- 4. Issue: Several people commented that we shouldn't be using the CAP process to address lead in Washington, especially since lead is no longer a problem.**

Response: Ecology disagrees. There was a long and open process that resulted in the selection of lead as the next chemical for a CAP. In 2000, Ecology recognized the need to address releases of the worst chemicals and proposed the PBT Initiative. PBTs are chemicals that are **p**ersistent, **b**ioaccumulative and **t**oxic. The 2006 PBT Rule (WAC 173-333) includes a list of PBTs and metals of concern and establishes Chemical Action Plans (CAPs) as the process the agency must

use to investigate each chemical and recommend actions to reduce exposures. Lead is considered a metal of concern. In March of 2007, Ecology published a report on the prioritization process used to determine which CAPs should be next (<http://www.ecy.wa.gov/biblio/0707016.html> ). Lead was ranked highest.

The PBT Rule specifies five evaluation factors to be used to prioritize PBTs. The first factor, relative ranking, is based on information in eight categories: persistence, bioaccumulation, human health toxicity, ecological toxicity, uses in Washington, releases in Washington, levels present in Washington’s environment, and levels present in residents of Washington. The other four factors are opportunities for reduction, multiple exposures, sensitive population groups, and existing plans or regulatory requirements.

Lead consistently came out at the top of the ranking in most criteria. It is widespread and a great deal is known about where it is found in the environment, where it is used and how exposure occurs. We have known for millennia that lead is toxic to humans and there is an abundance of data on its health effects, particularly to children. There have also been papers in the scientific literature for more than one hundred years about its effects on wildlife.

- 5. Issue: We received comments that the recommendations were too narrow and comments that the recommendations were too broad. Several people commented that we should only focus on the most significant sources of lead for children.***

***“Rather than a ‘shotgun’ approach to reducing the risk to human health and the environment from lead, Ecology should take a ‘rifle’ approach and address the most vulnerable populations, i.e. lead paint in older homes.” (Northwest Mining Association).***

***“The plan’s proposed recommendations will not adequately protect Washington’s citizens and wildlife from the hazards of lead exposure. The plan’s recommendations must be improved to adequately fulfill the goal of the PBT Program, which is to ‘reduce and phase-out PBT uses, releases, and exposures in Washington’ (WAC 173-333-100)” (Washington Toxics Coalition).***

Response: Ecology disagrees that the CAP should be narrowly focused. Ecology worked for several years with many stakeholders and members of the public to develop the PBT Initiative and the PBT Rule. The goal of the PBT Rule is to reduce and phase-out PBT uses, releases, and exposures in Washington. The rule defines a CAP as a plan that identifies, characterizes and evaluates all uses and releases of a specific PBT, a group of PBTs or metals of concern and recommends actions to protect human health and the environment. While Ecology and other agencies have other strategies to target children, this initiative is broader. It protects children, adults and wildlife.

A consistent challenge in developing recommendations to reduce lead exposures is the number of diverse uses and sources of lead. There are many sources of lead and the potential for harmful lead exposure is relatively common. As a result, while no single solution can address the whole problem, there are many opportunities to reduce lead exposures by targeting some of the many

individual sources. The recommendations in the Lead CAP try to balance the goal of a comprehensive plan with the current reality of significant resource constraints. In the final CAP, the recommendations are presented as the first steps the agencies believe are necessary to practically and effectively reduce the most significant lead exposures and releases that are occurring in Washington. To address concerns about the comprehensiveness of the plan, we included additional steps that may be re-considered in the future after the first steps are taken. This approach fulfills our aim of presenting a comprehensive plan, while also identifying the most important actions.

Resource constraints are addressed through the implementation plan (Chapter VIII) where we clarify that our priority is finding children with elevated blood lead levels and preventing children's exposure from the largest known source of lead for children in the U.S., which is lead-based paint.

***6. Issue: We received several comments that Washington State shouldn't do anything about lead unless we ban all uses of lead.***

Response: Ecology disagrees. Doing nothing helps no one. Ecology believes that reducing exposure for some people from some lead hazards as resources become available is an appropriate public health action. The widespread and ubiquitous use of lead in our economy means that everyone has some exposure. It also means that each person's exposure is unique to that person. Since there is no known safe level of lead exposure and exposures from all sources contribute to each individual's exposure, it is prudent to reduce exposures from all sources where possible. Nevertheless, the CAP recommendations do identify the most significant sources of lead and identify ways to reduce or phase out these sources and exposures. The most important source of lead exposure was found to be children's exposure to lead-based paint.

***7. Issue: Several people questioned the sources we used for data.***

Response: Ecology considers the best sources of data to be peer-reviewed studies published in the scientific literature and we give more weight to studies that are representative of what is happening in Washington. We cited studies that were conducted by Washington State agencies, other state agencies and the federal government. Many of these studies are of high quality, though they are unlikely to be published in scientific journals (e.g., state recycling rates), because they are not of sufficiently broad scientific interest. We also included government reports that included good reviews of the scientific literature. While state and federal reports are not peer reviewed in the same way as an article in a scientific journal, they are reviewed by other scientists. Many government reports also have a process for public review and comment before publication. In some areas, we were not able to find information from the highest quality sources and did cite other sources, such as from advocacy organizations or industry. In such cases the information is clearly presented as being from such a source.

In addition, it should be noted that we did not cite all the sources we consulted. Instead, we cited those studies we relied on. The Lead CAP is not intended to be an exhaustive review of the thousands of scientific articles on lead. For example, the EPA fact sheet on the new air lead

standard mentions that 6,000 new scientific papers have been published on the health effects of lead since 1990. We also did not cite most of the popular press articles or web pages we read.

**8. Issue: We received general statements of support.**

*[We] “applaud the DOE’s efforts on the Lead CAP and support the plan’s goal to identify, characterize and evaluate uses and releases of lead, and actions to protect human health and the environment.” (PEHSU)*

*“Thanks to you and the Lead Chemical Action Plan Technical Committee for your extensive work toward protecting Washington residents from lead hazards. This finalized report will prove a valuable resource in assessing and addressing lead-based paint hazards.” (City of Spokane Community Development Department)*

Response: Ecology appreciates the support we have received.

**9. Issue: Some commenters requested that ethics arguments be included in the CAP.**

*Report should include ethics argument. The reduction of lead exposures, especially for children, is our duty to future generations. This should be more explicitly explained in the report. (WSNA)*

Response: The ethical foundation for protecting human health from preventable exposures which cause harm is inherent in the formulation of this chemical action plan as well as our mission at Ecology. The health of sensitive populations including infants, children and pregnant women are of special concern.

## Comments Related to Chemical Information

**10. Issue: Several comments said lead is a naturally occurring element that is accessible to wildlife, so we shouldn’t be concerned about exposure or sources of lead from manmade products.**

Response: Lead is a naturally occurring element, however, it is also harmful to people and wildlife. There are natural sources of lead, but these releases are small compared to the amount released into the environment by human activities. The background levels of lead in soil in Washington are quite low, less than 20 ppm. Lead is used in a wide range of products and, prior to use, must be mined and purified. It is this process combined with the ways in which we release it in to the environment that makes it available to people and other organisms.

**11. Issue: Several comments stated that lead and lead compounds should be considered separately, rather than grouped together.**

Response: Ecology disagrees. We know that lead and individual lead compounds have different chemical interactions and different toxicities. It is true that elemental lead is less reactive than many lead compounds, but it is not inert and can form more toxic lead compounds under

common environmental conditions. No lead compound has yet been identified to be safe. In addition, the type of lead compound is rarely evaluated in environmental samples. The regulations on waste disposal, site cleanup, water quality, air quality, etc, depend on measurements of total lead and a sample may exceed the guidelines because of elemental lead or lead compounds. For example, under the federal Clean Air Act elemental lead emissions can be used as a surrogate to quantify lead compound emissions because of this propensity to exist as a compound.

***12. Issue: We received many comments that that lead from ammunition isn't bioavailable or mobile in soil or other media.***

Response: The issue of bioavailability and bioaccessibility bridges chemistry and health effects and is also addressed in **Issue 19** in the following section on health effects.

We included many scientific studies that provide detailed assessments of the bioavailability of lead from ammunition. In addition, the final Lead CAP includes a new study on lead in the environment from a shooting range recently released by Ecology in December 2008 (Pub. No. 08-03-038). This study illustrates clearly the bioavailability and mobility of lead ammunition from soil to nearby streams. The total recovered lead and the dissolved lead were many times higher than the acute and chronic water quality criteria.

## Comments Related to Health Effects

***13. Issue: Several people suggested that exposure to lead is no longer a significant public health problem, that it is a minor problem compared others such as smoking or alcoholism, or that the problem is lessening because it has already been adequately addressed.***

Response: As noted in Chapter III, there is substantial evidence that a large percentage of young children today are exposed to enough lead to cause several types of health problems. Since no “safe” level of lead exposure has been identified for children, and since lead has no known beneficial purpose in the body, minimizing exposure to lead is the best way to minimize its harmful effects. One of the purposes of the lead CAP is to identify and recommend ways to reduce harmful exposure.

There are many public health problems, and lead poisoning is often ranked as one of the more important ones due to the widespread occurrence of harmful lead exposure in children. We understand that there are many different opinions about the severity of the problem and the type and degree of effort that should be devoted to addressing lead exposure. The information presented in the CAP is intended to serve as the basis for choosing whether to change, continue, or discontinue current activities related to lead in Washington. The options and recommendations do not have the force of law, but merely describe activities that could be adopted by the legislature or by individual state and local agencies if they believe it is important to reduce lead use and exposure in the state. When and if the legislature and agencies choose to address lead in Washington, they will likely weigh the costs and benefits of lead-related activities with those of other important programs.

Both the number of children with lead poisoning (specifically, those with blood lead levels <sup>3</sup> 10  $\mu\text{g}/\text{dL}$ ) and the average childhood blood lead level continue to decline. However, lead poisoning is preventable and we believe that enacting the recommendations in the CAP will help reduce the burden of lead exposure more quickly for more people.

***14. Issue: Several people commented that there is little or no evidence of lead poisoning in people from ammunition. Others suggested that lead poisoning from ammunition is rare and we should focus on more common sources of exposure.***

Response: Many peer-reviewed studies have identified several ways in which ammunition can increase blood lead levels:

- Working and shooting at indoor and outdoor firing ranges has been shown to raise blood lead levels in adults, and these levels were higher than those of people who did not go to firing ranges. Although health effects in shooters have not been adequately studied, the blood lead levels found were often in the range where subtle harmful effects were likely.
- Several studies and case reports have found that fragments from gunshot wounds tend to raise blood lead levels and that people who had retained lead pellets or projectile fragments for many months or years tended to have higher blood lead levels than those without gunshot wounds.
- A few case reports have been published that describe significant lead poisoning in people who have swallowed lead shot or bullets.
- A few recent studies have suggested that meat near gunshot wounds in wild game can contain fragments of lead bullets or shot. Eating meat containing these fragments has been linked to increases in blood levels.

We agree that lead poisoning from ammunition is likely not as widespread as that from sources in Washington such as lead-based paint, and the recommendations in the CAP reflect a focus on paint and not ammunition. However, since the CAP is intended to be a comprehensive overview of sources of lead exposure, it is important to include a discussion of ammunition use and the potential for human exposure.

***15. Issue: Several people suggested that the state's blood lead action level for children should be reduced to 2  $\mu\text{g}/\text{dL}$  or lower to reflect a goal of zero exposure. However, other commenters wrote that an action level of 2  $\mu\text{g}/\text{dL}$  would be unreasonable and inappropriate. SAAMI commented that the Lead CAP takes extreme position that the threshold should be '0.'***

Response: We believe that children's blood lead concentrations should be as low as feasible. Since most children have blood lead levels below 2  $\mu\text{g}/\text{dL}$  that would appear to be a reasonable goal. However, it is important to consider whether this can be better achieved by following up with children who have moderately elevated blood lead levels (specifically, 2 to 5  $\mu\text{g}/\text{dL}$ ), or by removing known lead hazards and preventing future exposures. It is also important to understand that, given limited funding to address lead poisoning, agencies will tend to provide assistance to



children with higher blood lead levels (greater than 10  $\mu\text{g}/\text{dL}$ ) before those with lower blood lead levels.

When a child is found with a blood lead level that exceeds an “action level,” some type of help is offered to parents to help reduce the child’s lead exposure. The type of assistance often depends on the blood lead level, with higher levels prompting a greater degree of intervention from public health agencies and health care providers. Mailed fact sheets or telephone discussions may be provided when blood lead levels are moderately elevated, while higher blood lead levels may trigger home visits, environmental sampling, or medical treatment. There is no officially mandated “action level” in Washington, although DOH has generally supported the recommendations for follow-up published by the Centers for Disease Control and Prevention (CDC).

Laboratories in Washington must report the results of all blood lead tests to DOH, and when a child’s blood lead level is greater than or equal to 10  $\mu\text{g}/\text{dL}$ , DOH works with local health agencies to provide help to the parents. Recently, DOH has been contacting local health agencies when a child has a blood lead level of 5  $\mu\text{g}/\text{dL}$  or above.

Follow-up activities may be initiated by DOH, by local health districts, and/or by health care providers, and historically in Washington, the extent of activities has been determined in part by the availability of funds and personnel. Funding and staff time for follow-up of lead poisoning cases has varied from year to year and from county to county.

DOH recognizes that blood lead levels below the CDC action level of 10  $\mu\text{g}/\text{dL}$  are associated with harmful effects in children and that there is no known safe level of lead exposure. Further, DOH has been providing this information to the public and medical care providers through the agency’s outreach efforts, which includes mailing information about the hazards of lead to every family with a one year old child born in Washington. We plan to refine and expand our outreach program as funding allows.

We estimate that lowering the action level to 2  $\mu\text{g}/\text{dL}$  would result in follow-up for almost half of the young children in Washington and, depending on the extent of the intervention, could require significant funding. It is often difficult to identify the sources of lead exposure when blood lead levels are below 5  $\mu\text{g}/\text{dL}$ , and the benefits of agency-initiated intervention at blood lead levels of 2 to 5  $\mu\text{g}/\text{dL}$  are difficult to see. At this time we believe that resources required for follow-up of children with blood lead levels of 2 to 5  $\mu\text{g}/\text{dL}$  could be better used for lead poisoning prevention activities such as programs to reduce lead-based paint hazards.

***16. Issue: The Northwest Mining Association commented that the CAP should include a discussion of certain DOH studies, suggesting that they may provide useful information about lead poisoning in Washington.***

Response: A discussion of those studies was not included in the CAP because, after a detailed examination of the procedures and results, we did not have confidence that the information in the reports could be reliably extrapolated to the population of Washington. We still conclude that childhood lead exposure in Washington is not well characterized.

***17. Issue: We received one comment that funding for case management and environmental investigations should come from Medicaid.***

***“Funding for elevated blood lead level (EBLL) case management and environmental investigations should be funded through Medicaid, when appropriate, or other funding mechanisms. Funding for public health activities including EBLL case management is currently inadequate in Washington State” (Public Health Seattle & King County)***

Response: Ecology agrees that funding for lead exposure reduction activities is important and Medicaid is one source of funding for some case management services, such as home visits from the health department for environmental investigations. In Washington DSHS oversees our Medicaid program and would need to negotiate with the federal government to get reimbursement through Medicaid.

***18. Issue: There were several comments on increasing childhood blood lead testing. We received comments that we should increase childhood BLL testing for all children, target populations at higher risk of lead poisoning, and follow the federal Medicaid testing law.***

Response: Our recommendation continues to be that the decision to perform a voluntary BLL test should remain with parents and health care providers. Since there are many sources of lead exposure and no known safe level of lead, all parents should receive information about ways to reduce lead exposure and all children should be screened for lead exposure risk factors at one and two years of age. If risk factors are identified (or if there is uncertainty about the presence of one or more risk factors), a blood lead test should be performed. Expanding education and outreach efforts will improve screening and result in an increase in the number of children tested.

In 2008, DOH enlisted a panel of physicians, academics, and staff from several agencies to review the existing recommendations on childhood BLL testing and to consider changes (a summary of this panel and its recommendations are included in the Final Lead CAP in Chapter III on health effects). The panel concurred with the existing recommendation against testing every child and against testing any particular group of children based on a specific lead poisoning risk factor. However, the panel did recommend that DOH develop a risk factor questionnaire for Washington to assist parents, health care providers and organizations in identifying children at higher risk of lead poisoning.

We agree that focused attention is needed on the most vulnerable and high risk populations who are least likely to have access to quality medical care and are most likely to be exposed to lead. DOH should identify high risk areas considering factors such as age of housing, income, area-wide soil contamination and ethnicity. DOH should strongly encourage and track BLL testing in those areas. DSHS, DOH, local health agencies, physician/nurse organizations, and local health care providers should work together to promote increased screening for lead exposure risk factors. Nationally Medicaid is a risk factor for lead poisoning, but we do not know how important it is in Washington or how it compares to other risk factors in Washington. DSHS oversees our Medicaid program in Washington State.

Washington State will continue to periodically reassess childhood BLL testing recommendations. As more children are tested in Washington and we learn more about the extent and causes of lead poisoning in Washington, the state may reconsider targeting certain populations. If voluntary steps do not result in a significant increase in BLL testing, the state may reconsider requiring BLL testing for all children or a targeted higher risk population.

***19. Issue: Many people commented that metallic lead and lead contaminated soil is not bioavailable or bioaccessible.***

Response: The issue of bioavailability and bioaccessibility bridges chemistry and health effects and there is a similar response **Issue 12** in the comments related to chemistry.

Lead met the criteria for bioavailability needed to be included on the PBT list (WAC 173-333). The toxicity and rate of absorption of lead by plants and animals, including humans, depends on the specific compound as well as several variable environmental and biological conditions. Environmental conditions include pH, temperature, and salinity. Biological conditions include age and the amount of calcium and iron in the organism's diet. It is true that elemental lead is less reactive than many lead compounds, but it is not inert and can form more toxic compounds under common environmental conditions. Enough metallic lead can be absorbed by the body, after ingestion or from gunshot wounds, to cause health problems. There are unfortunate examples of children in the U.S. being harmed and killed by swallowing solid lead. Locally, there is the recent incident of children in Tacoma being poisoned by lead contaminated soil from smelting lead at home.

Ecology's Model Toxics Control Act (MTCA) clean up levels for lead and our guidance for people living in large areas of lead contamination are based on child health and what is known about lead in soil increasing the levels of lead found in children's blood.

***20. Issue: Several comments included general agreement on children as the most vulnerable.***

Response: We agree that children are the most vulnerable population and should be the focus of our actions.

***21. Issue: Many people commented that the risk to human health and the environment is not high enough to warrant a ban on lead ammunition.***

***“There is NO adequate substitute for lead ammunition to hunt with and that any effects on humans and wildlife DO NOT justify a ban as recommended by the state Department of Ecology.”(Peter Brinsek)***

Response: Ecology is not recommending a ban on lead ammunition. Ecology and DOH, however, have concluded that any reduction in lead exposure is a benefit to some individuals as well as the environment. It is for this reason we are recommending working with stakeholders on

the health effects of lead and voluntary steps to reduce the use of lead ammunition and increase recycling of lead ammunition at firing ranges.

## Comments Related to Legacy Sources of Lead

**22. Issue: *The Northwest Pediatric Environmental Health Specialty Unit (PEHSU) commented that “We strongly endorse recommendations to identify and remediate lead hazards in rental housing, including funding for these programs.”***

Response: Our recommendations include using education and outreach approaches to encourage more voluntary assessment by homeowners and to require assessment in pre-1960 rental homes. We agree that to be effective, assessment must lead to remediation measures that reduce exposures, but we are not recommending mandatory remediation in most cases. We do recommend requiring remediation in rental homes if a child has been poisoned by the house. Washington currently has federal grant funding to help homeowners with assessment and remediation, but finding a permanent source of funding remains a challenge.

**23. Issue: *Rental Housing Association of Puget Sound (RHA) commented that “RHA supports expanded public grants provided to homeowners for assessment and remediation to rental properties.”***

Response: We agree that public grants are important for assessment and remediation.

**24. Issue: *We received comments that existing laws on lead-based paint are, or are not, sufficient.***

***“Rental property owners already have laws regarding lead paint. Rental property owners who own homes built before 1978 have to disclose known information on lead-based paint and lead-based paint hazards before leases take effect.” (RHA)***

***“We agree that current federal and state requirements for disclosure of known lead-based paint at new tenancy are grossly inadequate to address lead hazards and protect human health, and support mandatory assessment for the presence of lead-based paint and other lead hazards for all rental units.” (The Lands Council)***

Response: Ecology agrees that the current laws on disclosure are not sufficient to protect children. The requirement to disclose what is known about the presence of lead-based paint acts as a disincentive to conducting an assessment. Requiring assessment addresses this deterrent and will encourage voluntary remediation to prevent future harm.

**25. Issue: *Some commenters were concerned that the CAP recommendation to require remediation of rental homes that have caused an EBLL did not adequately consider the challenges associated with such actions.***

***“While it is important to address the source of lead poisoning, requiring repair or abatement in EBL child occupied rental housing is problematic. There is great difficulty is definitively***

***identifying the source of lead that caused blood poisoning.” “Requiring repairs without funding may force closure of older units that provide needed, although less desirable, affordable housing.” “Landlords might become reluctant to rent units to family households. This violates Fair Housing laws but effectively makes family-sized rental housing harder to find.” (City of Spokane Community Development Dept.)***

Response: Ecology recognizes the challenges to writing good legislation for this recommendation. However, this approach has been successfully implemented in other states and the best examples will serve as models for our efforts. Balancing the need to provide affordable housing with the need to provide safe housing will likely be a central focus of any proposed legislation. People with lower incomes should not live in unsafe housing.

***26. Issue: Several commenters stated that all homes should be assessed for lead hazards, instead of just rental homes.***

***“Any legislation should include ALL housing not just rental housing.” (RHA)***

Response: Ideally, all homes would be assessed and remediated. However, the costs of such an undertaking would be very large. Mandatory assessment addresses the inherent disincentive that occurs with the status quo of voluntary assessment and mandatory disclosure. Ecology believes that the most practical approach is to begin by addressing rental homes since renters, regardless of income, are inherently more vulnerable because they are not able to alter their homes without permission of the landlord. Once people know that lead hazards exist at a property, the market should drive remediation. Our recommendation to require assessment in pre-1960 rental homes is a good first step to target a more vulnerable population in the homes that are most likely to have lead-based paint.

We look forward to working with the landlord community to gather more information on renters and how they compare to home owners in Washington.

***27. Issue: RHA commented that “Lead based paint that is in good condition is not a hazard. In King and Pierce County the majority of rental housing stock is in good condition. We would request that any type of action required by the rental property owner should only target housing that is found to have a problem.”***

Response: We agree that lead-based paint that is in good condition is not considered a hazard. However, waiting for children to be poisoned before acting is not sufficiently protective of their health. We look forward to working with the landlord community and gathering more information on the condition of lead-based paint in rental homes in Washington.

***28. Issue: A few commenters addressed the need for a Healthy Housing Program that would include sources of lead exposure along with other issues, such as indoor air quality, pesticides, cleanliness and chemical concerns of building materials.***

Response: Ecology supports the inclusion of lead hazards in a healthy housing program. There are federal programs that address these concerns. In 1991, Congress established HUD's Office of

Healthy Homes and Lead Hazard Control (OHHLHC) to eliminate lead-based paint hazards in privately-owned and low-income housing. The OHHLHC provides funds to state and local governments to develop cost-effective ways to reduce lead-based paint hazards. In addition, the office enforces HUD's lead-based paint regulations, provides public outreach and technical assistance, and conducts technical studies to help protect children and their families from health and safety hazards in the home.

For more information on the OHHLHC visit; <http://www.hud.gov/offices/lead/about.cfm>

**29. Issue: We received one comment on lead hazards in child care facilities.**

***“Washington State Department of Early Learning (DEL) in conjunction with Washington State Department of Community, Trade and Economic Development, Washington State Department of Ecology, DOH and local health departments should develop guidelines, standards, and protocols for lead hazard evaluation of Child Care programs located in buildings built prior to 1950. Pre-1950 housing stock is known to have a high prevalence of lead. Bans on the use of facilities with lead are unlikely to be tenable and may create social injustices. Efforts should focus on effective risk-based approaches over complete removal of lead from the housing stock.” (Public Health Seattle & King County)***

Response: We agree that addressing lead hazards in child cares is important to prevent some exposures. Although lead exposure may be harmful at all ages, we are most concerned about children under the age of 6, and most children that age are not in public schools. It is important to both have childcare that is available and safe.

Our recommendation is for CTED, Department of Early Learning (DEL), DOH and Ecology to review other state regulatory and/or health agencies' practices concerning child care licensing and lead based paint hazards. After protocols for lead hazard evaluation are developed and more facilities are assessed, we will have a better idea of the extent of lead hazards in child care centers in Washington. Once guidelines, standards and protocols have been developed, DEL, as the agency that licenses child cares, should consider requiring the evaluation and remediation of lead hazards in child care facilities as a requirement of licensing. In addition, Raising awareness of lead hazards may drive remediation in both homes and child cares.

**30. Issue: Several commenters emphasized that lead contamination from poor building demolition practices, can be a significant source of lead exposure to both children and adults. Some expressed a desire for more stringent regulation of these activities.**

***“Please note that I would also like to see movement toward educating contractors and other workers in the home-for example, painters-; in addition to homeowners, about how to conduct safe demolition for both remodeling and re-building. This is one of the leading sources of lead and asbestos exposure for children and adults.” (Terri Stilson)***

Response: Ecology agrees with the importance of educating the public, contractors, and workers about lead-safe work practices. The new federal EPA Renovation Rule addresses the problem of lead exposure during renovations in pre-1978 housing and child-occupied facilities. This rule

goes into effect in April 2010. This new rule requires lead safe work practices in pre-1978 housing, unless the paint is tested and found not to be lead-based paint. The rule only applies to contractors and includes worker training, but the information about the rule may also be helpful to people who do their own renovation. The Lead CAP recommends that CTED seek delegation of this rule, since it is a natural extension of the EPA rule already delegated to CTED on training and certification for trainers, lead workers, inspectors, risk assessors, supervisors, and project designers.

In response to these concerns, Ecology added information on the proper disposal of lead-based paint contaminated materials to the section in the Final Lead CAP on lead-based paint as a legacy source. Household hazardous waste (HHW) is exempt from hazardous waste requirements and landfills do not require test results before accepting household demolition waste. Landfills often do require test data if they receive demolition debris which does not qualify for the household exemption.

Washington State relies on generators of hazardous waste to properly dispose of non-exempt waste. Washington's regulations are based upon the Federal RCRA regulations and are intended to be self-implementing. Ecology only becomes involved 1) when there are questions, 2) if Ecology has concerns that the designation process has not been done appropriately or 3) if the company is selected for a compliance inspection as part of Ecology's enforcement program.

To assist companies with the challenges associated with demolition debris, Ecology established a webpage that includes specific information on how to handle lead containing demolition debris. <http://www.ecy.wa.gov/programs/hwtr/demodebris/index.html>

For neighboring properties, any complaints about lead dust go to the local air agency.

## Comments Related to Occupational Sources of Lead

The Lead CAP includes information on occupational exposure to lead and the Washington Department of Labor and Industries (L&I) participated in the development of the Lead CAP. However, the following responses to comments on occupational sources were prepared by Ecology.

***31. Issue: We received comments that the CAP should address situations where workers inadvertently take lead home from work and expose their families. Workers who have EBLs should be encouraged to have their children tested for lead.***

Response: We agree and the CAP recommends that educational and outreach materials be developed or updated and distributed to health care providers, workers and employers. Adults with elevated BLLs should be made aware of the significance of a high blood lead level reading, not just for their health but the health of their family. This is especially true given that there is no evidence of a threshold for exposure in children where adverse effects do not occur. DOH and L&I share information on occupational take-home exposure and the effects on children.

**32. Issue: We received comments that the current BLL monitoring and worker removal levels need to be updated.**

***“The report should also recommend occupational guidelines for adult exposure to lead, which should be no greater than 25 ug/dL, as outlined in the Association of Occupational and Environmental Clinics’s Lead Exposure recommendations.” (WSNA)***

Response: Ecology agrees that the standards are not based on our current understanding of lead toxicity and L&I should reevaluate the criteria that define when workers should be removed from the workplace due to lead exposures. Ecology does not have the authority to change regulations on occupational lead exposure. Any review of occupational regulations for lead exposure will be done by L&I when they have the resources and opportunity. Adopting the comprehensive recommendations for lead workers detailed in the 2007 Association of Occupational and Environmental Clinics (AOEC) would go a long way toward addressing the need to reduce take home lead. The AOEC currently recommends workers be removed from work when chronic blood lead levels reach 30 µg/dL or more.

**33. Issue: Local Hazardous Waste Management Program in King County commented that “L&I’s Division of Occupational Safety and Health Program should prioritize high hazard industries to ensure compliance with existing lead standards.**

Response: Ecology agrees that high hazard industries should be targeted. L&I tracks where the most lead exposure has occurred and works with those industries to prevent worker exposure. In addition to education and outreach, L&I performs consultations to help businesses comply with current standards and compliance visits to ensure compliance. The recommended survey of occupational use and exposure to lead will help L&I further target current high hazard industries in Washington.

**34. Issue: Local Hazardous Waste Management Program in King County commented that “L&I should develop and provide up-to-date information and materials for health care providers, business owners, and workers, about the hazards of lead to adults and ways to reduce exposures.”**

Response: Our recommendation is that L&I should continue to provide such information.

**35. Issue: Local Hazardous Waste Management Program in King County commented that “The trigger for medical surveillance (including BLL testing) under the General Industry standard should not rely solely on exceedance of an air-lead level. Workers should be included in a medical surveillance program, whenever they are handling or disturbing materials with a significant lead content in a manner that could reasonably be expected to cause potentially harmful exposures through inhalation or ingestion.”**

Response: The CAP recommends L&I harmonize and update the occupational lead regulations. This includes evaluating the trigger for medical surveillance for workers currently covered by the General Industry standard.



**36. Issue: Local Hazardous Waste Management Program in King County commented that “L&I should conduct a statewide survey on occupational use, and exposure to, lead, to help L&I locate as yet unidentified lead-exposed workers. The survey should assess compliance with current regulations in known industries, identify new industries with lead exposures, and identify vulnerable worker populations. This study should include BLL testing to ensure that all potentially exposed workers are tested, regardless of whether BLL testing for these individuals is required by OSHA regulations.”**

Response: Thank you for your support of that recommendation.

## Comments Related to Consumer Products

### General Products

**37. Issue: We received hundreds of comments encouraging us to strengthen our recommendations significantly to include a ban on all lead in consumer products.**

**“Eliminate all unnecessary exposures to lead from consumer products, including vinyl products, clothes and cosmetics.” (Kerri Altom)**

**“After a de minimis amount of lead is determined, ban lead from all items coming into the state, not just in children’s products. Follow the Denmark model (Rachel Laderman).**

**“since there are good non-lead alternatives for wheel weights, fishing tackle, and shot, why not ban them, as other states have? Voluntary measures are not likely to succeed, even with lots of free technical assistance, as shown by King County Local Haz Waste Management Program’s initially voluntary requirement of dentists to trap mercury from going down the drain – this only became effective when installing traps became mandatory and enforceable.” (Rachel Laderman)**

Response: The final Lead CAP does not include a recommendation to ban lead in new products. Our recommended first step is to work with the appropriate stakeholders to encourage voluntary reductions in the use of lead in their products or manufacturing processes. Lead is used in so many consumer products that eliminating “all unnecessary exposures”, while clearly preferable, would necessitate funding that is not feasible in the current economic climate. Other issues of concern deal with the fact that for some products, lead is a contaminant and was not added intentionally. There are also different risks from different products, depending both on how much lead is in the product and how much lead is released under different conditions.

The new federal regulation that addresses lead in consumer products will help reduce exposure. The Consumer Product Safety Improvement Act (CPSIA) was enacted in August 2008 and the first lead limit took effect in February 2009.

**38. Issue: Many commenters said more technical assistance to industry is needed regarding alternatives to the use of lead.**

***Establish policies and programs that help businesses phase out their use of lead (Washington Toxics Coalition).***

***“Is the Department of Ecology willing to share expenses arising in the cost of developing, testing and marketing these alternatives?” (Randy King)***

Response: One of our recommendations is to continue our technical assistance to industry through our pollution prevention plans and existing programs such as Lean Environment, Technical Resources for Engineering Efficiency (TREE), and Environmentally Preferable Purchasing programs. This recommendation further states that Ecology should work with industry, academia and local communities to develop new alternatives and evaluate green chemistry programs that may be effective in Washington. Toxics use reduction efforts can offer solutions that are more efficient and cost effective than the continuing use of hazardous chemicals. We do not currently have the financial resources to fund developing, testing and marketing alternatives. There is an ongoing debate about how to allocate the costs of those activities.

***39. Issue: We received many comments that the CAP should support required disclosure of lead used in manufacturing and in products.***

***“Require businesses to report the amount of lead they are using. This would provide critical information to Ecology and the public on where lead is used in the state. It also would serve as a deterrent to businesses that do not want to be seen as using a harmful chemical.” (Washington Toxics Coalition).***

Response: Ecology agrees that having more information about where lead is used in products and manufacturing processes would be helpful, especially in determining where to direct our limited agency resources to protect the most vulnerable populations. The Children’s Safe Product Act, passed in 2008, would have required manufacturers of children’s products to disclose their use of lead. However, the passage of the federal Children’s Products Safety Improvement Act (CPSIA) preempted this law for lead. Ecology believes the most pressing current need is to address ongoing exposures that occur because of past use of lead paint. Therefore we are not recommending additional disclosure requirements at this time.

There are currently federal laws that require some disclosure for the use of lead during manufacturing. The federal Emergency Planning and Community Right to Know Act (EPCRA, or SARA Title III) provides for disclosure of information about the presence of toxic chemicals in communities. The purpose of EPCRA is to protect public health and the environment from hazards posed by toxic chemicals. The Act, passed in 1986, creates the annual hazardous chemical inventory as well as the toxics release inventory (TRI). Facilities that manufacture, process or use lead or lead compounds must report quantities under both the annual hazardous chemical inventory and the TRI. The annual hazardous chemical inventory records the amount of certain chemicals stored at facilities. Hazardous chemicals must be reported to the annual hazardous chemical inventory when quantities stored at a facility exceed 10,000 pounds, including lead and lead compounds. The TRI lead rule, 40 CFR 372, lowers the reportable

minimum threshold for lead and lead compounds to 100 pounds. Not all industries are required to report by this law.

***40. Issue: Local Hazardous Waste Management in King County commented that we should “Promote environmentally preferable purchasing and the creation of purchasing specifications for lead-free alternative products to be used by Washington State and local agencies.”***

Response: Thank you for your comment. Ecology is in the process of aligning our environmentally preferable purchasing efforts with other efforts to reduce the use of priority chemicals, which includes lead. In addition, we are beginning a process to develop a chemical assessment protocol in support of identifying safer alternatives.

***41. Issue: Local Hazardous Waste Management in King County commented that we should “Require product stewardship for cradle-to-cradle management of products containing lead, where there are no alternatives. We support producer-provided product stewardship programs to reuse or appropriately dispose of lead products, to minimize human contact and environmental contamination. Producers are best suited to utilize their supply-chain relationships to create efficient take-back programs and can have the most impact on improvements in product design that reduce toxic content and maximize reusability.”***

Response: Ecology feels strongly that requiring product stewardship for certain products is a good option for managing and reducing the exposure to lead in products. Keeping toxic chemicals out of the waste stream decreases the need for virgin material to be produced for inclusion into new products. Our recommendation is to explore the effectiveness of a manufacturer supported product stewardship approach to design, manufacture and take back of lead-containing products.

***42. Issue: WPSR commented that “Public health protection should become sacrosanct in any trade agreements; US standards should not be turned into a ceiling allowing more hazardous substances for imports, but rather should be set as a floor that cannot be weakened.”***

Response: Thank you for your comment.

***43. Issue: We received comments requesting more information on specific non-lead alternatives in the Lead CAP.***

Response: The Lead CAP included general information on whether there are any available alternatives for products that contain lead. Ecology’s policy is not to recommend specific retail products; however there is information in many retail catalogs and websites regarding available alternatives. For example, an internet search with a type of ammunition and “non-lead” usually finds alternatives for sale, if they exist. In the future Ecology may develop information for people on available alternatives.

**44. Issue: One person commented on the hazardous waste exemption for households.**

***“need to revisit the laws around disposal of toys or other household items with lead. Why is it ok for a homeowner with several boxes or lead-contaminated toys to throw these into the local landfill, whereas a small business with the same amount has to bring them to a hazardous waste facility? If HHW even in modern landfills contaminates leachate (p. 8, 73, 77), then HHW should be banned from landfills throughout the state.” (Rachel Laderman)***

Response: Ecology is currently evaluating whether or not existing laws addressing household hazardous (HHW) waste need to be revisited. Regardless of the outcome, it will still be important to pursue programs to eliminate the use of toxic materials in products in the first place so their ultimate disposal is more a question of how to reuse the materials rather than protecting people and the environment from potential exposures to toxic materials. Ongoing work that is directed at reducing the use of toxics include the update of the State’s Beyond Waste Plan, implementation of the Children’s Safe Products Act, updating pollution prevention programs, developing a protocol to assess alternatives to toxic chemicals, and continuing to provide technical assistance to local businesses of all sizes.

## Toys and Children’s Products

**45. Issue: Many people commented that children’s products containing lead should be a priority for Ecology.**

Response: Ecology agrees that children’s products are a priority. We will continue to evaluate the implementation of the new federal limits on lead in children’s products in CPSIA and evaluate whether additional actions at the state level are needed, such as to include additional products.

**46. Issue: The Washington Toxics Coalition requested that we include lead on list of chemicals of concern for children to be developed under the Children’s Safe Products Act.**

Response: Ecology and DOH are in the process developing a list of chemicals of high concern for children under the Washington State Children’s Safe Products Act (CSPA). These chemicals are both toxic and have potential exposure to people. There are additional concerns about including lead, due to pre-emption by federal laws. We are continuing to assess this question. Readers interested in the development of rules (including the list of priority chemicals) should visit our website at <http://www.ecy.wa.gov/programs/swfa/rules/ruleChildSafe.html>.

## Vinyl Products

**47. Issue: We received many comments asking us to phase out all unnecessary use of lead in vinyl products and provide information to consumers on how to avoid vinyl products.**

***“I am livid to know that vinyl products may contain lead. Vinyl table cloths are used to eat off of in our preschool, and in Washington our children wear rain coats and rain boots. I feel let down by our leaders.” (Keira Wilson)***

Response: Ecology agrees that there should be no unnecessary exposures from consumer products containing lead, including vinyl products. As stated earlier, it would be ideal if all unnecessary uses of lead could be eliminated right away but we recognize that such a sweeping approach is not possible right now, especially in this era of constrained resources. Our recommendations support the elimination of as many sources of lead as possible, but we are focusing our own limited resources on working to reduce the biggest current uses of lead.

## **Fishing, Hunting, and Shooting Products**

### **Ammunition**

***48. Issue: We received comments for and against a ban on the use of lead in ammunition.***

Response: The Lead CAP does not recommend a ban or regulation of lead in ammunition beyond current law. This action plan’s purpose is to identify the dangers of lead, detail where this substance can be found in our environment and recommend ways to reduce or its harm. Our recommendations are based on an extensive review of relevant scientific research on the topic. Based on those findings there is reason to be concerned about the release of lead through non-permitted means. Ecology, in conjunction with other agencies (such as WDFW) may develop outreach and education programs in the future to help the hunters and shooters voluntarily reduce the harm caused by the continued use of ammunition containing lead.

***49. Issue: Many people commented that the aim and result of the Lead CAP was to circumvent the 2<sup>nd</sup> Amendment of the U. S. Constitution.***

***“I feel this is a back door ban on hunting and an infringement of my 2<sup>nd</sup> Amendment Right...”(Roger Bachman)***

Response: Ecology has no interest in infringing on 2<sup>nd</sup> Amendment rights to keep and bear arms.

***50. Issue: We received many comments that the Lead CAP was created with a pre-conceived agenda.***

***“The entire draft of the Lead CAP is filled with inflammatory language that seeks to use lead as a means to end hunting in Washington State”. (NSSF).***

***“... it is the NRA's view that there was a preconceived idea in the minds of many parties involved in the development of the Lead CAP that lead, especially lead ammunition, should be phased out of commerce in the State of Washington and that the report was drafted to support that predetermined objective.” (NRA)***

Response: Ecology did not formulate the Lead CAP for the purpose of banning or phasing out lead ammunition. The Lead CAP is part of our larger PBT initiative to reduce PBTs in Washington. We have no agenda in relation to hunting, fishing and shooting beyond our stated goal of minimizing the risks to people and the environment associated with lead.

***51. Issue: We received many comments that alternatives to lead ammunition are either not available or of lesser quality.***

***“Even for shotguns, non-lead based ammunition is of lesser availability and performance, and substantially higher cost than lead ammunition.” (Mark Crispin)***

***“In one week I will be hunting elk during muzzle loader only season when any projectile made of a substance other than lead is illegal. No substitute is currently available.” (Dick Cinkovich)***

Response: Ecology acknowledges that not all types or uses of ammunition have acceptable non-lead alternatives but there are viable alternatives for some types. Ecology agrees that availability, cost, and performance are important issues. Different non-toxic shot alternatives have different densities and are appropriate for different guns. Ecology agrees with WDFW’s advice that individuals should only use ammunition that the manufacturer recommends. As detailed in the economic analysis, we agree that the alternatives currently cost more. However, availability varies among different types of ammunition. Discussions with suppliers indicate there is no problem with availability for some alternatives. It is hard to find some non-lead alternatives, especially on store shelves. They are more available online, even from the same retailer. If there is more demand from consumers, the more retailers and manufacturers will respond with more availability. Our hope is that education and outreach to consumers about the benefits of non-lead alternatives will help increase demand for these products. The move toward viable alternatives must take place within the gun owning community. Ecology will continue, through this chemical action plan and other outreach and education programs to provide the sound reasoning behind the need for such voluntary reductions.

While ammunition preferences are personal choices, we stand by our references to the scientific data on wound rates in the Lead CAP.

***52. Issue: We received comments for and against reducing the uses and releases of lead ammunition.***

***We urge the Lead CAP to include actions to eliminate lead shot, lead bullets, and lead fishing gear. Phasing out the use of lead in hunting and fishing products is essential for human and environmental health (WPSR).***

***“I am a NRA member but I have to agree if a product that can be found as an alternative to lead in the lead shot or other products and can be done with a minimum impact to the gun owners. I have to say ‘go for it’. I would be a more responsible gun owner if I also considered the impact on the environment. I would agree with this Ban.” (Tammi Smith).***

***“I really don’t see any reason for the continued sale of lead shotgun shells in this state, or the country for that matter.” (Paul Bunn, self-identified hunter)***

***“Helping people make wise decisions about their stewardship of the environment can lead to many good things that regulations would only result in legal battles.” (Ric Bowman, President Yakima Rifle and Pistol Association)***

Response: Again, Ecology is not recommending a ban on any type of ammunition. One of Ecology’s goals is to reduce and eliminate threats to human health and the environment from consumer products that are a source of lead exposure. It is both prudent and responsible to explore all available options to achieve that goal. Banning lead in certain products where the use of lead is not necessary is an option that warranted full vetting. However, in the absence of potential population level effects on wildlife or more information on effects in humans, we concluded the most effective approach to addressing the human and environmental health concerns surrounding the use of lead ammunition is to provide stakeholders with information on the most recent scientific finding regarding lead and work with them to voluntarily reduce exposures.

***53. Issue: Some commenters expressed concern that the Lead CAP recommendations do not include best management practices (BMPs) for shooting ranges.***

***“Another fundamental flaw is a lack of recognition of best management practices that protect human health and the environment.....Omitting BMPs will result in a myopic and unnecessarily burdensome action plan.” (SAAMI)***

***“Shooters value a clean environment and being able to increase the recycling of lead from our ranges would benefit our programs.” (Ric Bowman, President Yakima Rifle and Pistol Association)***

Response: Ecology agrees that the BMPs are useful for preventing lead contamination. These are examples of the kind of voluntary steps that shooters are taking and that we would like to explore with stakeholders. Clearly many hunters and shooters are committed to addressing some of the dangers posed by the release of lead in to the environment from their sport. This is one of the reasons we ultimately arrived at a recommendation which encourages continuing a constructive dialog and working with stakeholders. In the Final Lead CAP we added the EPA BMP manual on lead at outdoor shooting ranges to the discussion of the mobility of lead in soils.

***54. Issue: Ric Bowman, President of the Yakima Rifle and Pistol Association, commented that “Washington needs new safe and environmentally friendly ranges close to urban areas.”***

Response: Ecology agrees that a good outcome would be to have more safe shooting ranges, especially near urban areas. We recognize that hunters and shooters have a long history of environmental stewardship, which is one reason why we concluded the best option is to work together to achieve our common goals.

***55. Issue: We received several comments that there were no representative from gun interests on the advisory committee***

Response: It was not our intent to exclude from the advisory committee representatives from any group. Our goal was to include representation from a wide variety of potential lead sources. However there are so many sources of lead that we did not get coverage on every source. Most product manufacturers or users were not directly represented on the advisory committee, such as for wheel weights. The advisory committee was convened to help us gather information and establish a direction for the Lead CAP. Unfortunately the only sportsman on the committee was an angler. At the beginning of the Advisory Committee process we believed this to be appropriate. It was only through the completion of our research on lead sources (and most of the way through the Advisory Committee process) that we realized ammunition was such a large source of lead in Washington. During the drafting of the CAP we consulted with our own staff and advisory committee members who are hunters or shooters. Ultimately, even if we had an official representative of shooters, hunters, or ammunition manufacturers on the advisory committee, our recommendation would still have been to work with the wider community.

***56. Issue: Several commenters were critical of our estimates on how much ammunition is used.***

Response: Ecology stands by its range of estimates on ammunition use. Ecology used many sources to get a range of estimates of how much ammunition is used in Washington each year. We carefully looked at all the comments we received on this issue and tried to verify any claims made. In the Final Lead CAP we clarified where assumptions had to be made, such as the use of non-lead alternatives where not required, recycling and people making their own ammunition. Ecology believes 550 metric tons is the best estimate for how much lead shot is used in Washington each year, because the other estimates rely on national data, are underestimates, or are for all ammunition. This estimate was provided in 2005 by several agencies for a proposed tax on sales of lead shot in Washington.

There were specific comments on our assumption that ammunition accounts for 95% of the federal excise tax on guns and ammunition. (This response is similar to the response to **Issue 75** in the later section on the economic analysis.) Unfortunately retailers and manufacturers were not forthcoming with data on sales. We estimated 95% of sales were for ammunition from a few retailers who were willing to estimate how much of their sales were for ammunition vs. equipment. Based on comments we received, we decided to reject the 95% estimate. We looked for a better source of information and decided to use the USFWS 2006 survey on fishing, hunting and wildlife watching. From their data on how much hunters spend on ammunition, rifles and shotguns, our new approximation in the final Lead CAP is that 25% of the federal excise tax is for ammunition. This changes the first two estimates in our range of estimates on ammunition use in Washington, but does not change our conclusion that 550 metric tons is still the best estimate. The estimates for all ammunition sales based on the national tax revenue went from 149-1939 metric tons in the Draft Lead CAP to 40-520 metric tons in the Final Lead CAP.

***57. Issue: The National Rifle Association commented on a proposed ban on lead shot that was not in the Draft Lead CAP.***



***“Lead CAP Recommendation 9 which reads: ‘We recommend a statewide ban on the use of lead shot for recreational purposes as it maintains our focus on primary prevention and not waiting until harm to a population has been shown. Steel shot and other non-lead alternatives are widely available. The requirement to use non-lead shot would not apply to any law enforcement uses, including training. The ban may include other exemptions, such as for certain antique shotguns that cannot use non-lead shot’ Contrary to the protestations of the DOE and their colleagues at the WDFW, the Lead CAP clearly contemplates lead ammunition prohibitions and the NRA is adamantly opposed to such prohibitions.” (National Rifle Association)***

Response: The Draft Lead CAP that was released for public comment does not recommend a ban on lead ammunition. The quote referenced in the comment above was from an earlier working draft which was not released to the public. As part of developing the recommendations in the Lead CAP, we did consider product bans, including some types of ammunition. However, after careful examination of all available information on the topic, including input from the advisory committee, we determined that the best recommendation is to work with stakeholders to voluntarily reduce the use of lead ammunition and increase recovery and recycling at shooting ranges. The Draft Lead CAP that was released for public comment did not recommend any product bans.

The PBT rule requires Ecology to identify policy options for managing, reducing and phasing out uses and releases of the PBT or metal of concern being addressed. The range of options to be considered includes 1) no action, 2) options that result in the phase out of the uses and releases of lead, 3) options to manage lead to reduce exposures and 4) other options, including the use of available substitutes. We considered this wide range of options for ammunition as well as other new products and the other sources of lead in Washington.

## **Fishing Weights**

***58. Issue: We received comments both supporting and opposing a ban on lead fishing weights.***

***“Stricter regulations and penalties must ultimately be enacted to counter the rapidly increasing threat to the safety of people and animals. We call on the Department to issue an urgent appeal in the strongest language for the substitution of non-toxic alternatives to lead for use in ammunition and fishing gear.” (Skagit Audubon Society)***

***“Lead sinkers/lures in the size/weight range that you propose phasing out is acceptable. Phasing out larger/longer sinkers/lures would create a substantial problem for us.” (Westport Charterboat Association)***

***“I strongly oppose the banning of lead in ammunition and fishing weights in WA State.” (Robert Pierce)***

Response: Ecology agrees that people should be encouraged to use less-toxic alternatives when available. We believe education and outreach for voluntary steps are still the best options to help the public understand the dangers inherent in the use of products made of lead. It's very important to get stakeholder support for regulatory actions. Based on the comments from people who fish, there is a lot of interest in that community in using non-lead alternatives and support for banning small lead fishing weights.

There are several reasons why Washington may reconsider requiring non-lead fishing tackle in the future, such as if voluntary steps do not succeed in reducing the uses and releases of lead fishing tackle, if fisherman and companies that make fishing tackle request it, or if additional data shows more harm to wildlife than currently estimated.

## Weights

### ***59. Issue: Several commenters expressed support for, or opposition to, a ban on lead wheel weights.***

Response: As with other lead products, the Lead CAP recommends education and outreach to stakeholders rather than a ban on the use of lead wheel weights. However, the 2009 legislature passed a bill (HB 1033) which will ban the use of lead wheel weights in cars and small trucks by 2011. Since this law does not apply to larger vehicles, Ecology will continue to recommend that we work with tire manufacturers, repair shops, and other stakeholders to voluntarily reduce the use of lead wheel weights where non-lead alternatives are available. It is important to get stakeholder support for regulatory actions and there is a lot of stakeholder support for phasing out the use of lead wheel weights.

## Miscellaneous Products

### ***60. Issue: We received one comment on lead in packaging.***

***“The state must begin enforcing the lead in packaging law. Eliminating lead from packaging not only protects human health, but also prevents lead from contaminating the solid waste stream and, ultimately, contaminating our environment. Also, the State should join the Toxics in Packaging Clearing House to help facilitate enforcement of law.” (Washington Toxics Coalition)***

Response: We agree on the importance of enforcing our existing law on lead in packaging. Washington is one of nineteen states that passed legislation to ban lead and three other toxic chemicals (mercury, hexavalent chromium, and cadmium) in packaging. In 2005, we joined nine other states in the Toxics in Packaging Clearinghouse (TPCH), which supports the implementation of the law. TPCH works with states and industry to remove lead, cadmium, mercury and hexavalent chromium from packaging. Ecology has recently taken steps to enforce this law with specific manufacturers.

### ***61. Issue: We received one comment on lead in artificial turf.***

***“create standards for lead in synthetic playfields purchased by Washington State, local agencies, and school districts.” (Local Hazardous Waste Management Program in King County)***

Response: The use of lead in products is so widespread that it is not possible to discuss or include every one of them. The Lead CAP addresses the most common products or types of products. The emerging issue surrounding lead in synthetic/artificial turf products has caught the attention of agencies both on the State and Federal level. The CDC has specifically released health advisories related to those health concerns. For more information please go to <http://www.cdc.gov/nceh/lead/artificialturf.htm>

The U.S. Consumer Product Safety Commission also has information regarding the health concerns posed by lead in artificial turf; <http://www.cpsc.gov>.

## **Comments Related to Ongoing Releases of Lead**

***62. Issue: We received a comment on our estimates for emissions.***

***“Much of the lead emissions in the pulp and paper industry come from wood that is processed in the facility. This lead naturally occurs in the soil, and is taken up into the tree, as well as other minerals. The table is misleading because forest fires, and burning of straw stubble and wheat stubble would cause similar releases quantities (or likely even higher) if the TRI reports were required from these activities.” (Ray Lam)***

Response: Ecology recognizes the limitations of information from the Toxics Release Inventory (TRI) and included an explanation of these limitations in the chapter on ongoing releases. However, it is still the best source of information available to us. We do not have the necessary data to estimate the amount of lead released in forest fires or other burning activities. From our inquiry into pulp and paper mills, we found lead from trees, from soil on the trees, and from their sources of energy and water. Much of their lead releases are because they use a lot of water and energy.

Ecology does not classify lead in the upper levels of soil as “naturally occurring.” Most of the lead in that soil is contamination from past uses of lead.

***63. Issue: Ecology received comments supporting and opposing the elimination of mixing zones for PBTs as part of waste water discharge permitting.***

***“Support efforts to eliminate mixing zones in Puget Sound and other waterways for lead and other bioaccumulative materials.” (Local Hazardous Waste Management King Co.)***

***“I am also concerned with phasing out the mixing zones. How does this result in less lead being emitted? The mixing zones are an important component of NPDES permits. Mixing zones are required to protect the beneficial uses of water such as drinking water, fish habitat, recreation, and irrigation.” (Ray Lam)***

***“There is no need for the cleanup action plan to push for reducing or eliminating mixing zones for lead.” (City of Everett Public Works)***

Response: At this time Ecology is not recommending amending the current water quality rules to eliminate mixing zones for lead. Current practice is to authorize mixing zones only after “all known, available, and reasonable methods of treatment and control” have been required of the permittee. Amending the current water quality rules that govern mixing zones would be a multi-year process. Ecology will continue to consider this option for PBTs.

Mixing zones themselves are not required to protect the beneficial uses of water. However, mixing zones are an important component of NPDES permits, which are required to protect the beneficial uses of water. If mixing zones were phased out, then facilities would be required to meet the standards at the end of the pipe, rather than at the edge of the mixing zone. Facilities would have to reduce the lead released either through using different materials or engineering controls to capture lead before it is released in order to meet the standards at the end of the pipe.

***64. Issue: The Northwest Mining Association commented that lead is not a PBT.***

***“While lead is a metal of concern, it is not a persistent, bioaccumulative and toxic chemical (PBT). The only plausible rationale for eliminating an NPDES mixing zone for lead would be if the science indicated that lead behaved as a PBT in the aquatic ecosystem. A recent peer reviewed ‘Metals Risk Assessment’ by the U.S. EPA confirms quite clearly that lead is not generally bioaccumulative in the aquatic ecosystem.”***

Response: Ecology agrees that lead is most properly considered a metal of concern under the PBT rule. As in the above response, the Lead CAP does not recommend eliminating mixing zones for lead.

The March 2007 EPA report on Metals Risk Assessment does state that “Some metals (e.g., lead) tend to biodilute in aquatic food webs.” Ecology has always acknowledged this with the complementary statement that lead has not been found to biomagnify. Biomagnification and biodilution both relate to trophic transfer in an aquatic food web.

The listing of lead as a metal of concern in Ecology’s PBT Rule is based on its bioaccumulation in humans, plants, and animals. Bioaccumulation is different from biomagnification. The PBT Rule and the EPA report on Metals Risk Assessment have very similar definitions of bioaccumulation as the process by which substances increase in concentration in living organisms as they take in contaminated air, water, soil, sediment or food because the substances are very slowly metabolized or excreted. Lead meets the specific criteria for bioaccumulation in the PBT Rule, which is a bioconcentration factor (BCF) or bioaccumulation factor (BAF) in aquatic species greater than 1000 or, in the absence of such data, that the chemical’s log-octanol water partition coefficient ( $\log K_{ow}$ ) is greater than five. For lead, BCF or BAF values for aquatic organisms of up to 92,000 have been measured and/or estimated using computer models. The range of BCF values used by EPA to characterize the bioaccumulation potential of lead exceed bioaccumulation criterion in the PBT rule.

**65. Issue: We received a comment from the City of Everett Public Works on releases of lead from permitted point sources.**

***“Both the toxics loading data for lead from point sources, the reasonable potential to exceed process used by Ecology in evaluating Permittees, and the 303(d) list of impaired waters support the fact that lead from permitted point sources is not a significant water quality problem in our state.” (City of Everett Public Works)***

Response: Ecology agrees.

**66. Issue: Several commenters recommended that Ecology address cumulative lead emissions to air.**

***“In addition to lower lead air standards, we need to look at cumulative impacts of multiple air point sources. Currently, this is not required under existing regulations.” (People for Puget Sound)***

Response: The Washington Clean Air Act (Chapter 70.94 RCW) does not authorize us to look at cumulative impacts of lead as an air toxic. At this time Ecology has opted to recommend no additional actions other than to maintain current practices and status quo. The amount of lead that is released into the environment from permitted industrial facilities and sewage treatment plants is low compared to other sources.

## **Comments Related to Performance Measures**

**67. Issue: Washington Physicians for Social Responsibility commented that performance measures for sites on the water list “should include first, whether a water quality plan has been implemented, and then how rapidly levels of lead fall in water and fish once the plan is implemented.”**

Response: Sites on Ecology’s list of impaired waters (the 303d list) are monitored and cleaned up as part of our regular work on water quality. Ecology does monitoring for effectiveness on selected sites as resources allow. Different cleanup sites are addressed with different follow up actions.

## **Comments Related to the Economic Analysis**

**68. Issue: Many comments appeared to be based on the assumption that Ecology has the authority to ban products and is banning lead ammunition.**

Response: Ecology cannot ban lead ammunition nor are we seeking authority to do so. As part of the CAP process, we were obligated to consider a wide range of options. After considering the options, we decided the best recommendation at this time is to work with stakeholders on voluntary steps to reduce the uses and releases of lead from ammunition.

In addition to estimating costs associated with implementing the recommendations, we estimated costs associated with some additional options as part of our process to select recommendations. The estimate for how much it would cost to switch from lead fishing weights and lead shot to non-lead alternatives was not meant to suggest we are recommending a ban for either product.

***69. Issue: WPSR commented that “preventing lead exposures is a smart, healthy way to lower societal costs.”***

Response: We agree. Thank you for your comment.

***70. Issue: We received comments that we did not do any analysis on the costs and that the analysis was not complete.***

***“There appears that no one is considering the future cost to hunters and sportsman who shoot and hunt in this state.” (Chad Alexander)***

***“Balanced research would have explored the effect, documented the recommendation’s, availability / cost of alternatives, and effects to ownership and operation.”(Allen Campbell)***

Response: The economic analysis conducted as part of the Lead CAP is not as detailed as such an analysis would be for a rule to implement a law. For all proposed significant legislative rules, we do a cost-benefit analysis to verify that the probable benefits of the rule Ecology is proposing are greater than its probable costs. We do a least burdensome alternative analysis to make sure the proposed rule is the least burdensome to those affected. Ecology also analyzes how the rule will impact small businesses in comparison to large businesses and if there are ways to reduce the cost on small business.

The economic analysis done for the Lead CAP has a different purpose. It is meant to inform the development of recommendations. To develop recommendations we look at a number of options and consider the economic impacts associated with implementing recommended actions as one of a number of criteria. The analysis can be useful in determining which options should be considered further. For the Lead CAP we looked at the most direct costs associated with some options as part of our process to pick which options we should recommend.

One challenge with the economic analysis is that we were not able to quantify how much each source contributed to the overall lead exposure, so we could not do a quantitative cost/benefit analysis. Even if we could quantify how much each source contributes to the exposure in Washington, each individual has a unique combination of sources of lead exposure. Our recommendations focus on the most important source for children, which is old lead-based paint. However, reducing any exposures when possible will reduce exposures for some people and the environment. The important of reducing any one exposure will vary among individuals.

***71. Issue: We received comments concerned that other costs of lead exposure were not included in the estimated costs of our current lead exposure.***

***“We urge inclusion of expanded cost factors for other neurodevelopmental, behavioral and health impacts including costs of lead exposures related to links between crime and behavior; special education, and adult health impacts of heart disease, liver damage, stroke, and premature aging of the brain and related cognitive impacts”. (WPSR)***

Response: Ecology agrees that lead has many negative health effects as mentioned in the chapter on economic analysis. However, we have not included them in the analysis of economic costs of current lead exposure for several reasons. We only used the effects of lead on lowering IQ in children 0-6 years old, and the subsequent effect on lifetime income, to estimate the costs of our current lead exposure. These effects are the most well documented method of estimating the cost of lead exposure. In adults, lead is well documented to cause higher blood pressure and that cost has been estimated by the EPA for the air lead level and the new Repair, Renovation and Painting (RRP) rule. The cost benefit analysis for the RRP rule contains that analysis, plus information on the analysis for the air lead level and the studies that support the connection between lead exposure and high blood pressure in adults. We have not included a cost estimate for the effect of lead on high blood pressure in adults because we do not have a good estimate of the current lead exposure for adults in Washington.

We have not included the costs due to crime in the costs of current lead exposure, because we do not want to count effects on IQ more than once. Lead exposure leads to decreases in IQ and increases in criminal behavior. Decreased IQ is also associated with increased criminal behavior. The link between lead exposure and crime may be due both to lead’s effects on IQ and its effects on behavior. If we included the costs of increased crime, we would be counting lead’s effects on both IQ and behavior, and thus double counting the costs due to the effect on IQ.

We have also not attempted to estimate the cost of effects to wildlife or the costs associated with cleaning up lead contaminated shooting ranges.

Since we have not included all of the costs of lead exposure, our estimate of the cost of our current exposure is an underestimate.

***72. Issue: We received several comments that a ban on lead ammunition would lead to increased costs to businesses in Washington.***

***“Banning the use of lead in ammunition or making it significantly more expensive through taxation will destroy the sport shooting industry in the State of Washington. This industry supports tens, if not hundreds, of millions of dollars in commerce and millions of dollars of tax and license revenue every year. Without the ability to use lead ammunition a huge portion of this commerce and revenue will disappear.” (Greg Pickles)***

Response: Ecology is not recommending a ban on any lead ammunition in the Lead CAP. We agree that it is likely that an increase in costs would reduce participation for some people and would affect the sports industry. We are aware of the impact sport shooting has on our state’s economy. These costs were not included in the Economic Analysis chapter of the Lead CAP. The response to **Issue70** includes more on the scope of the economic analysis for a CAP.

**73. Issue: A number of commenters offered alternative estimates on the costs of lead ammunition and less-toxic alternatives. Most of these commenters stated non-lead ammunition is much more expensive than in our Economic Analysis and were concerned about the increased costs to individuals, especially for practice.**

Response: Ecology agrees that the cost of alternatives is currently higher than the cost of lead ammunition and we stand by the estimates in the Lead CAP for the costs of non-lead alternatives to lead shot. However, we also recognize that we estimated the costs of shot shells without including other reasons why users would choose specific types of shot shells. Ecology is aware that not all guns can use steel shot, and this would be an additional expense that was not included in our estimates. Some guns can be modified for use with harder shot by replacing the choke.

We looked at the costs of shot shells because the non-lead alternatives are readily available. We found costs for both lead and non-lead shot shells from a major sporting goods retailer. We used costs from 78 lead, 20 bismuth, 215 steel, 63 tungsten and 7 other products. For each product we calculated the price per shell to develop the ratio of costs of non-lead compared to lead shot shells. We asked commenters to substantiate their higher estimates, but did not receive additional information.

Ecology agrees that it is important to practice with ammunition that provides the same ballistics characteristics. We are confident that as the hunting and shooting community becomes more aware of the adverse affects associated with the use of lead ammunition the market will respond to this reality by offering a wider range of non-toxic alternatives at competitive prices.

**74. Issue: Several people commented that the alternatives to lead fishing weights cost too much.**

Response: Ecology agrees that non-lead alternatives cost more, as detailed in the economics analysis. We looked at 293 fishing weight products from a major sporting goods retailer to estimate the cost for a variety of sizes and shapes made from different metals. The results of this analysis were inadvertently left out of the Draft Lead CAP. It has been restored in the final version (see Table 39). The choice of fishing tackle is complex and we are not recommending that everyone be required to use non-lead weights in Washington.

**75. Issue: There were several comments on why we assumed that 95% of the federal excise tax on guns and ammunition is derived from purchases of ammunition.**

Response: (This is similar to our response **Issue 56** in the section on products.) Unfortunately retailers and manufacturers were not forthcoming with data on sales. We estimated 95% of sales were for ammunition based on input from a few retailers who were willing to estimate how much of their sales were for ammunition vs. equipment. Based on the comments we received, we decided to reject the 95% estimate. We looked for a better source of information and decided to use data from the USFWS 2006 survey on fishing, hunting and wildlife-watching. From their data on how much hunters spend on ammunition, rifles and shotguns, our new approximation in the Final Lead CAP is that 25% of the federal excise tax is for ammunition. This changes two estimates in our range of estimates for how much ammunition is used in Washington each year



and how much it would cost to switch from lead shot to non-lead shot. Using 25% of the sales subject to the federal excise tax to estimate ammunition sales lowered the estimate of the increased cost to replace lead ammunition from \$3-10.7 to \$0.9-3 million for sales in Washington and from \$42-148 to \$11-40 million for Washington's share of national sales. However, it does not change our conclusion that \$13 million, based a different estimate for how much lead shot is used in Washington, is likely to be the closest to the actual cost.