



# Bay Area Hazardous Waste Management Facility Allocation Committee

administered by

Association of Bay Area Governments

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**December 4, 2009  
10:00 am to 12:30 p.m.  
Conference Room B – MetroCenter  
Agenda**

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|--------------|--|---|
| <b>10:00</b> | <b>Introductions / Approve Agenda</b>  | Action  |
| <b>10:10</b> | <b>Adopt minutes of May 29, 2009 meeting</b>   | Action<br>(Attachment A)                      |
| <b>10:15</b> | <b>Green Chemistry</b><br><i>Staff</i> will report on the status of DTSC's Green Chemistry initiative, and relevant ABAG/San Francisco Estuary Partnership efforts.  | Information<br>(Attachment B)                 |
| <b>10:30</b> | <b>Save the Bay Clean Bay Project</b><br><i>Save the Bay</i> has funding through ABAG/SF Estuary Partnership to help local governments address Bay pollution. <b>Amy Alton Ricard</b> and <b>Stephen Knight</b> will present/seek input on plans to assist jurisdictions interested in Styrofoam and plastic bag bans; reducing pesticides; and safe management of problem wastes such as pharmaceuticals.   | Information<br>(Attachment C)                 |
| <b>11:10</b> | <b>Extended Producer Responsibility:<br/>Legislative Preview</b><br>TAC member <b>Rob D'Arcy</b> , chair of the California Product Stewardship Council, will preview 2010 EPR legislation. CPSC is also monitoring implementation of Green Chemistry regulations pursuant to AB 1879. A Fact sheet on AB 283, Assemblymember Chesbro's Framework Legislation, and other documents are attached.<br><br><b>Action Possible:</b> The Committee may make recommendations on bills to ABAG's Legislation and Governmental Organizations Committee and/or give staff direction on activities to pursue. | Information/Possible Action<br>(Attachment D) |
| <b>11:35</b> | <b>Hazardous Waste Data Update</b><br><b>Jennifer Krebs</b> will address projected availability of 2009 data. Staff proposes that 2008/2009 data be analyzed together in Fiscal Year 2010-11.<br><br><b>Action Requested:</b> Approve proposed analysis schedule.  | Information/Action                            |
| <b>11:45</b> | <b>Green Business Program – Update/ Checklist Approval</b><br><b>Scandone</b> will provide a Program update and present the new Janitorial checklist for Committee approval.<br><br><b>Action Requested:</b> Approve Janitorial Checklist  | Information/Action<br>(Attachment E)          |
| <b>12:05</b> | <b>Other Business / Set Next Meeting</b>   | Information/Action                            |
| <b>12:15</b> | <b>Adjourn</b>   |   |



**Bay Area Hazardous Waste Management Facility Allocation Committee**

Administered by:  
**Association of Bay Area Governments**

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November 23, 2009

To: Hazardous Waste Management Facility Allocation Committee  
From: Ceil Scandone, Senior Regional Planner  
Re: Green Chemistry Initiative and Related Activities

**Summary**

The Green Chemistry Initiative continues to move forward under the direction and management of the Department of Toxic Substances Control. DTSC has issued a draft Straw Proposal that lays out proposed processes intended to achieve the objectives of AB 1879, established a Green Ribbon panel, and held numerous workshops to take comments on the work to date.

We had hoped to have DTSC staff and Technical Advisory Committee member Matt McCarron at the meeting to provide a comprehensive update on the progress of the effort. However, Matt and other state agency staff are on mandatory furlough on December 4<sup>th</sup>.

In lieu of Matt's presentation, staff will present a brief update, and identify relevant ABAG/San Francisco Estuary Project activities. If the Committee wishes, a longer status report can be agendaized for the next meeting when Matt can attend.

**Background**

The Green Chemistry Initiative was launched in 2007 by Linda Adams, Secretary for Environmental Protection. The goal of the Initiative was to develop policy recommendations to advance more environmentally-responsible product design so that the manufacturing, use, or disposal of products generates, uses and releases less hazardous and toxic substances.

DTSC was charged with managing the effort. An extensive process of consultation with scientists, and other experts from around the world, and broad public outreach culminated with the publication of the California Green Chemistry Initiative Final Report in December 2008. That report is available on the DTSC site at:

[http://www.dtsc.ca.gov/PollutionPrevention/GreenChemistryInitiative/upload/GREEN\\_Chem.pdf](http://www.dtsc.ca.gov/PollutionPrevention/GreenChemistryInitiative/upload/GREEN_Chem.pdf)

During the 2008 session, two key pieces of legislation were signed by the Governor: AB 1879 and SB 509. The former directs DTSC to develop regulations that create analytical methods for safer chemical alternatives; and, identify and prioritize chemicals of concern. The latter requires the state to create an online Toxic Information Clearinghouse.

**Status/Attachments**

DTSC's efforts during 2009 have been directed towards the implementation of AB 1879. Following an outreach effort designed to solicit input from the public and stakeholders, a draft Straw Proposal was developed that lays out a series of processes intended to achieve the legislation's goal of accelerating the transition to safer, environmentally more benign consumer

## **Attachment B**

products. The straw proposal, entitled *Plain English Outline of “Safer Alternatives for Consumer Products” Rule* is the first item included in Attachment B.

The draft straw proposal was posted on the DTSC website and circulated for review at several public workshops. A report entitled *Questions and Concerns Raised in Public Workshops Regarding AB1879 Regulatory Package Development* is posted on the website and also included in Attachment B.

In April, DTSC announced the selection of a Green Ribbon Science Panel for the Green Chemistry Program. Panel members are prominent scientists, senior public agency staff, legal experts, industry representatives and others who will assist DTSC as the regulations are developed. The panel includes several experts from the Bay Area who have worked with the Committee and/or ABAG/SFEP in various capacities. Two day-long meetings have been held to date. The news release issued by DTSC to announce the panel’s formation is also included in Attachment B.

### **Association of Bay Area Governments/San Francisco Estuary Project Initiatives**

ABAG and SFEP have initiated a number of efforts that support the objective of accelerating the transition to safer, environmentally more benign consumer products.

The Green Business Program ([www.greenbiz.ca.gov](http://www.greenbiz.ca.gov)) has for the last decade required businesses to seek less-toxic alternatives to products that are used in their operations and in the routine maintenance of their facilities.

EcoWise Certified ([www.ecowisecertified.org](http://www.ecowisecertified.org)) and the Urban Pesticide Pollution Prevention Project ([www.up3project.org/](http://www.up3project.org/)) are more recent programs launched with funding from the State Department of Water Resources. Both were established to help reduce the amount of toxic chemical pesticides used to control ants, rodents and other structural pests.

An Environmentally Preferable Purchasing workshop was held in March of this year to assist local agencies interested in establishing more environmentally responsible purchasing practices. Staff is consulting with local EPP experts on future EPP activities.

ABAG/SFEP have directed funds from various grants to local agencies and organizations that are working to reduce the use and/or promote the proper disposal of hazardous and toxic substances. For example, ABAG/SFEP has directed funds received from US EPA to Save the Bay for their Clean Bay Project, which is helping local governments interested in reducing serious threats, including those associated with Styrofoam and plastic bags . Save the Bay staff will make a presentation about their project later in the meeting.

Attachments:

- Plain English Outline of “Safer Alternatives for Consumer Products” Rule
- Questions and Concerns Raised in Public Workshops Regarding AB1879 Regulatory Package Development
- News Release: DTSC Announces Members of New Green Ribbon Science Panel

# DRAFT STRAW PROPOSAL

[Version 5.1 04-23-2009 15:00]

## Plain English Outline of “Safer Alternatives for Consumer Products” Rule

### SECTION 1. PURPOSE AND SCOPE

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**Goal:** To accelerate the transition to *safer, environmentally more benign consumer products*

**Purpose:** The Safer Alternatives rule sets forth processes that will:

- Reduce the presence of hazardous chemicals in products sold or used in California
- Drive technological innovation and development of safer, healthier, and environmentally more benign products across their lifecycles
- Consider alternatives so actions do not lead to adverse consequences
- Move beyond limitations of existing risk assessment system (i.e., “focus on the better, not how bad is bad”)
- Manage unknowns and take action (i.e., make decisions where data may be incomplete or unavailable)
- Apply market-based compliance measures
- Oversee and measure progress

**Scope:** The proposed regulations do not affect a duty or requirement imposed under federal or state law; do not alter or diminish any legal obligation required in common law or by statute or rule; and do not create or enlarge a defense in an action to enforce a legal obligation otherwise required in common law or by statute or rule.

**Intergovernmental Coordination:** The proposed rule will work in harmony with, and build upon to the extent practicable, the following related programs (*pursuant to Health and Safety Code section 25257.1*):

- ARB Consumer Products
  - ARB Fuels
  - DPR Pesticides
  - DPH Consumer Products, Cosmetics, etc.
  - DIR Cal-OSHA
  - Others
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### SECTION 2. DEFINITONS

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The following words and phrases are defined as follows for purposes of this article.

(a) “*Alternatives analysis*”—means

(b) “*Candidate list*”—means

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### Plain English Outline of “Safer Alternatives for Consumer Products” Rule

- (c) “*Chemical*”—means any naturally occurring or synthetic chemical, compound, by-product, substance, agent, or formulation that is found in a consumer product or can result from the use or disposal of a consumer product.
- (d) “*Chemical of concern*”—means
- (e) “*Consumer product*”—[repeated verbatim from statute] means a product or part of the product that is used, brought, or leased for use by a person for any purposes. “Consumer product” does not include any of the following:
- (1) A dangerous drug or dangerous device as defined in Section 4022 of the Business of Professions Code.
  - (2) Dental restorative materials as defined in subdivision (b) of Section 1648.20 of the Business and Professions Code.
  - (3) A device as defined in Section 4023 of the Business of Professions Code.
  - (4) A food as defined in subdivision (a) of Section 109935.
  - (5) The packaging associated with any of the items specified in paragraph (1), (2), or (3).
  - (6) A pesticide as defined in Section 12753 of the Food and Agricultural Code or the Federal Insecticide, Fungicide and Rodenticide (7 United States Code Sections 136 and following).
- (f) “*Department*”—means the Department of Toxic Substances Control, established pursuant to section 25111 of the Health and Safety Code, as amended by section 100 of the *Governor’s Reorganization Plan Number 1 of 1991*.
- (g) “*Lifecycle*”—means all of the steps or phases of a consumer product’s existence—from raw material and energy inputs, design, production, manufacture, distribution, use, and disposal or reuse/recovery.
- (h) “*Lifecycle assessment*” (*LCA*)—means a systematic method for compiling, evaluating, interpreting, and documenting the environmental aspects and potential impacts associated with a consumer product and its manufacture, distribution, use, and disposal or reuse/recovery.
- (i) “*Manufacturer*”—means [placeholder: includes manufacturer, supplier, importer, distributor, or retailer of a consumer product intended for sale or use in California]
- (j) “*New chemical*”—means
- (k) “*Person*”—means an individual, trust, firm, joint stock company, business concern, partnership, limited liability company, association, or corporation, including, but not limited to, a government corporation. “Person” also includes any city, county, city and county, district, commission, the state or any department, agency or political subdivision thereof,

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any interstate body, and the federal government or any department or agency thereof to the extent permitted by law.

- (l) “*Potential alternative*”—means
- (m) “*Purpose*”—means the intended essential function and use of a specific consumer product.
- (n) “*Sensitive sub-population*”—means members of subgroups that comprise a meaningful portion of the general population, including, but not limited to, infants, children, pregnant women, the elderly, individuals with a history of serious illness, or other subgroups that are identifiable as being at greater risk of adverse health effects than the general population.
- (o) “*Toxics Information Clearinghouse*”—means the system established pursuant to Health and Safety Code section 25256.

### SECTION 3. PROCESS TO IDENTIFY CHEMICALS OF CONCERN

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The process to identify chemicals or chemical ingredients of concern in consumer products will use a broad list of scientific criteria for placing chemicals on a “candidate” list. Criteria would be clearly laid out in regulation, but the list itself will not be in regulation, and will be dynamic. A set of prioritization criteria will then be used (as described in section 4 of this document) to prioritize chemicals on the candidate list, and develop a list of “prioritized chemicals of concern.” This approach is based on a defined set of criteria, will capture a large universe of chemicals, and will allow rapid identification and listing (or delisting) of chemicals or chemical ingredients.

Any chemical meeting any *one or more* the following criteria may be placed on the candidate list:

- Any new or existing chemical for which a minimum data set is not available that provides a thorough understanding of the potential risks associated with the chemical, including adverse health or environmental effects and exposure potential. The required minimum data set is the six hazard endpoints (acute toxicity, chronic toxicity, teratogenicity or developmental and reproductive toxicity, mutagenicity, ecotoxicity, and environmental fate) comprising the “Screening Information Data Set” (SIDS) test battery established by the Organization for Economic Cooperation and Development (OECD, 1998a)”
- Any chemical which appears on any “list” published by any government authoritative body, or nongovernmental organization, and that are deemed by DTSC to be potential chemicals of concern with respect to Health and Safety Code section 25252 based on available scientific information. (DTSC would have sole discretion to make this determination. This would provide DTSC with the flexibility to adopt chemicals

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appearing on new, relevant “lists” (e.g., the SIN List<sup>1</sup>), as they are published, without the need to conduct additional rulemaking;

- Any chemical for which there is scientific evidence of any potential adverse effects to human health or the environment;
- Any chemical to which humans have been shown to be exposed through the California Environmental Contaminant Biomonitoring program<sup>2</sup>, or other relevant biomonitoring studies, such as the Center for Disease Control NHANES surveys<sup>3</sup>; or biomonitoring studies conducted by non-governmental organizations.
- Any chemical already regulated in consumer products and/or packaging sold in California based on hazardous characteristics, such as toxicity (e.g., cadmium, mercury, lead, and hexavalent chromium);
- Any chemical known to the State of California to cause cancer or reproductive harm as specified under Proposition 65<sup>4</sup>;
- Any chemical with any of the hazard traits or environmental and toxicological end-points specified by OEHHA pursuant to 25256.1;
- Any chemical identified by IARC as carcinogenic to humans (i.e., group 1 substances)<sup>5</sup>;
- Any persistent, bioaccumulative and toxic chemical on the USEPA’s “PBT List<sup>6,7</sup>”;
- Any chemical designated as “higher hazard substances” by TURA<sup>8</sup>;
- Any chemical on the Washington State PBT List<sup>9</sup>;
- Any chemical classified as potentially very persistent and very bioaccumulative (vPvBs) in accordance with the criteria set out in Annex XIII of the EU REACH (Registration, Evaluation, and Authorization of Chemicals) Regulation<sup>10</sup> (Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals),;
- Any chemical with evidence of potential endocrine disrupting effects (i.e., identified as category 1 in the priority list of substances established under the EU’s Community Strategy for Endocrine Disruptors”) <sup>11</sup>;
- Any chemical classified as carcinogenic category 1A, 1B or 2 in accordance with the European Regulation on the Classification, Labeling and Packaging of Substances and

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<sup>1</sup> <http://www.sinlist.org/>

<sup>2</sup> <http://ww2.cdph.ca.gov/programs/Biomonitoring/Pages/default.aspx>

<sup>3</sup> <http://www.cdc.gov/nchs/nhanes.htm>

<sup>4</sup> <http://www.oehha.org/prop65.html>

<sup>5</sup> <http://monographs.iarc.fr/ENG/Classification/index.php>

<sup>6</sup> [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=1999\\_register&docid=99-28888-filed.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=1999_register&docid=99-28888-filed.pdf)

<sup>7</sup> [http://www.epa.gov/tri/trichemicals/pbt%20chemicals/pbt\\_chem\\_list.htm](http://www.epa.gov/tri/trichemicals/pbt%20chemicals/pbt_chem_list.htm)

<sup>8</sup> <http://www.mass.gov/legis/laws/mgl/21i-9.htm>

<sup>9</sup> <http://www.ecy.wa.gov/programs/swfa/pbt/list.html>

<sup>10</sup> [http://ec.europa.eu/environment/chemicals/reach/reach\\_intro.htm](http://ec.europa.eu/environment/chemicals/reach/reach_intro.htm)

<sup>11</sup> [http://ec.europa.eu/environment/endocrine/strategy/short\\_en.htm](http://ec.europa.eu/environment/endocrine/strategy/short_en.htm)

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Mixtures which took effect on 20 January 2009 (REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008)<sup>12, 13, 14, 15</sup>;

- Any chemical classified as mutagenic category 1A, 1B or 2 in accordance with the European Regulation on the Classification, Labeling and Packaging of Substances and Mixtures which took effect on 20 January 2009 (REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008)
- Any chemical classified as toxic for reproduction category 1A, 1B or 2 in accordance with the European Regulation on the Classification, Labeling and Packaging of Substances and Mixtures which took effect on 20 January 2009 (REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008);
- Any chemical classified as category 1 respiratory sensitizers in accordance with the European Regulation on the Classification, Labeling and Packaging of Substances and Mixtures which took effect on 20 January 2009 (REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008);
- Any chemical that is known or anticipated to be potentially released during normal use of that product, or when the product is disposed of at end-of-life (e.g., in a landfill).
- Any chemical that is a known air pollutants, or potentially may give rise to air pollutants, including ozone forming compounds, particulate matter, toxic air contaminants, and greenhouse gases;
- Any chemical with any potential adverse human health or environmental impacts, that have the potential to contaminate surface water, groundwater, and soil;
- Any chemical which, during manufacturing, give rise to hazardous byproducts and waste materials that require treatment and/or disposal;
- Any chemical shown to potentially adversely impact worker safety and or public health;
- Any chemical with any potential or anticipated negative or adverse impacts to human health and safety or the environment;
- Any chemical that would be, or would be presumed to be, a hazardous waste when discarded; or
- Any chemical meeting certain of the specified hazard criteria (to be specified in detail in regulations) as described in the Globally Harmonized System of Chemicals Classification and Labeling created by the United Nations.

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<sup>12</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:353:0001:1355:EN:PDF>

<sup>13</sup> [http://ec.europa.eu/environment/chemicals/ghs/index\\_en.htm](http://ec.europa.eu/environment/chemicals/ghs/index_en.htm)

<sup>14</sup> <http://www.bath.ac.uk/internal/bio-sci/bbsafe/cmt.htm>

<sup>15</sup> [http://ecb.jrc.ec.europa.eu/documents/Classification-Labeling/Table\\_3-2.doc](http://ecb.jrc.ec.europa.eu/documents/Classification-Labeling/Table_3-2.doc)

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The proposed regulations will address “new” chemicals, as follows:

- Based on the above criteria, any new chemical lacking adequate hazard characterization data would be placed on the high priority chemical of concern list described in section 4 below. In addition, any [manufacturer] who wishes to use a new (to that manufacturer) chemical, or any existing chemical in a new use application, in a consumer product, would be required to submit information regarding the identity and proposed or anticipated use of that chemical to the Toxics Information Clearinghouse. Moreover, manufacturers would have to submit the new data to the Toxics Information Clearinghouse prior to initiating a planned or foreseeable change in the use of a chemical.

### **SECTION 4. PROCESS TO PRIORITIZE CHEMICALS OF CONCERN**

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Once a candidate list for prioritization has been established pursuant to Section 3 above, chemicals in that list will be evaluated and prioritized.

The first level of prioritization will require that those chemicals or chemical ingredients that actually end up in consumer products sold or offered for sale in California be identified. Any chemicals or chemical ingredients that do not actually end up in consumer products would be excluded from further evaluation. Thus, this initial screening evaluation will require use data. Accordingly, manufacturers who sale or offer for sale consumer products in California that may contain any chemical or chemical ingredient identified on the candidate list will be required to submit use data to DTSC via the Toxics Information Clearinghouse portal. The information required will include identification of all products containing a chemical from the candidate list, and the estimated volume of that chemical per individual product, and the total volume estimated in all products made by that manufacturer that are sold or offered for sale in California. The manufacturer will also be required to report on whether or not the candidate chemical or chemical of concern is known or expected to be released (in the broadest sense) during normal use of the product, or at end of life when the product is disposed (e.g., to a landfill). And finally, the manufacturer will be required to report any time there is a planned or foreseeable change in the use patterns for a given chemical.

DTSC will restrict further evaluation and prioritization only to those chemicals that actually end up in consumer products that are sold or offered for sale in California, and will prioritize chemicals based on the following criteria:

- volume; (what should be the lower threshold for “high” priority?)
- potential for exposure; (is there expected, known, or anticipated release during use or at end of life?)
- exposure of California’s citizens based on biomonitoring data;
- potential effects on sensitive subpopulations, including infants and children;

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- lack of minimum data sets required to fully evaluate the hazard characteristics of the chemical. The required minimum data set is the six hazard endpoints (acute toxicity, chronic toxicity, teratogenicity or developmental and reproductive toxicity, mutagenicity, ecotoxicity, and environmental fate) comprising the "Screening Information Data Set" (SIDS) test battery established by the Organization for Economic Cooperation and Development (OECD, 1998a)"
- human experience suggesting that the chemical or chemical ingredient poses a substantial risk to human health or safety, or the environment;
- evidence of any actual adverse environmental impact of the chemical or chemical ingredient;
- evidence of accumulation/persistence in the environment; [and/or]
- any evidence that otherwise suggests that there are “reasonable grounds for concern” regarding the potential adverse impacts of the chemical.

Analogous to the USEPA CHAMP program, chemicals will be designated “high” or “low” priority based on these criteria. (There will not be a “medium priority” category as there is under CHAMP, because under CHAMP the medium priority chemicals are those lacking adequate data to prioritize. In California, chemicals lacking such data will automatically be classified as “high priority” until such time as manufacturers make such data available and the chemicals can be reevaluated.) Any chemical designated as “high” priority based on above criteria would be placed on a “high priority chemicals of concern list”, and would be subject to the alternatives analysis described in Section 5.

#### SECTION 5. PROCESS TO EVALUATE ALTERNATIVES

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##### Alternatives Analysis

An alternatives analysis shall be required for consumer products that contain one or more high priority chemicals of concern. The alternatives analysis shall be conducted by manufacturers, importers, suppliers, retailers and any other entity responsible for placing the consumer product in commerce in California. Importers, suppliers and retailers may conduct the alternatives analysis or may request or require the manufacturer to provide the findings of an alternatives analysis to downstream users. These findings can be provided to each individual downstream user, or posted in a location accessible to downstream users. It will be the responsibility of the manufacturer, importer, suppliers, retailer and any other entity responsible for placing the product in commerce in California to determine if a consumer product contains one or more chemical of concern. DTSC will confirm these findings through its enforcement authority, research, collaboration with other authoritative bodies and by requesting information regarding these chemicals through the authority granted pursuant to Health and Safety Code section 57019.

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The alternative analyses required pursuant to these regulations shall be implemented according to a schedule established in the regulations. This schedule will allow the requirement to perform alternatives analyses to be phased in and provide an initial phase wherein necessary changes to the analysis requirements may become evident and can be implemented. The first phase shall require completed alternatives analyses on or before six months from the effective date of the regulation, for consumer products containing prioritized chemicals of concern that are intended for use by pregnant women or children under the age of six. In addition consumer products containing high priority chemicals of concern that have been identified by ECHA, pursuant to the requirements of the EU REACH, as chemicals that require authorization shall have completed analyses on or before 6 months from the date such chemicals are listed as requiring authorization. All other alternatives analyses for consumer products containing high priority chemicals of concern shall be completed on or before 18 months from the effective date of the regulation.

The completed alternatives analysis shall be submitted to DTSC electronically through the Toxics Information Clearinghouse portal. In addition, specified findings of the alternatives analysis shall be submitted to a publicly accessible portion of the Clearinghouse to ensure transparency and enhance public input. [Manufacturers] who submit alternatives analyses shall consider all comments, assess the comments’ relevance to the alternatives analysis and revise the analysis in response to comments that change the findings of the analysis. The comment period for an alternatives analysis shall remain open for 3 months and the revised alternatives analysis shall be re-submitted to DTSC and the Clearinghouse on or before 3 months from the close of the comment period. In addition, at any time DTSC may evaluate an alternatives analysis and require revision or additional analysis. All respondents whose consumer products continue to contain one or more high priority chemicals of concern shall revise the alternatives analysis using updated information, including, but not limited to, consideration of newly identified alternatives and changes in manufacturing processes. Revised alternatives analyses shall be submitted on or before 24 months from the date the previous version of the analysis was submitted. Such revisions to the alternatives analysis shall continue until the high priority chemical of concern is restricted or prohibited from this use. If an independent third party entity is used to complete or evaluate the alternatives analyses, the regulations will include a certification process.

The alternatives analysis shall identify consumer products that contain one or more high priority chemicals of concern and identify the availability of potential alternatives. These alternatives should be broadly considered to include alternatives to the chemicals of concern in the consumer product (chemical substitution) as well as other alternatives that may include, but are not limited to, alternative manufacturing or handling processes that result in reduced high priority chemicals of concern in a product, or alternative forms of products that do not contain chemicals of concern. If no alternatives can be identified for a subject consumer product or chemical of concern the analysis shall be placed in a category within the Toxics Information Clearinghouse that specifies no available alternatives and shall be subject to

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ongoing public comment. If a comment is submitted regarding a potential alternative, the respondent shall complete an alternatives analysis on or before 12 months from the date of the comment.

The alternatives analysis shall identify and evaluate the level of hazard and critical exposure pathways associated with consumer products that contain one or more prioritized chemicals of concern as well as for the identified alternatives. The alternatives analysis shall consider health impacts, ecological impacts and lifecycle impacts of prioritized chemicals of concern in consumer products and identified alternatives.

The health and ecological impacts of the current product and its alternatives will be evaluated in the alternatives analysis using attributes that include, but are not limited to, acute and chronic toxicity, carcinogenicity, reproductive hazard, mutagenicity, teratogenicity, endocrine disruption, aquatic toxicity, persistence, bioaccumulation, mobility and potential for exposure.

The methodology for conducting the lifecycle assessment will include all stages of the lifecycle and will be based on the mass flow of materials and energy in and out, emissions, and associated impacts of the different unit processes included within the lifecycle. The defining feature of lifecycle methodology is that it captures multi-media environmental impacts associated with all upstream and downstream stages of a system built on existing methods established through ISO 14040 and ISO 14044 and as described in *Life Cycle Assessment: Principles and Practice* (EPA/600/R-06/060, May 2006).

Assessment of the impacts arising from the life cycle of products shall be carried out in a manner that allows the impacts to be reported per functional unit for the product. The system boundary shall be clearly defined for each product and its underlying processes. The assessment should include impacts arising from processes, inputs and outputs in the life cycle of a product, including but not limited to:

- a. raw material acquisition and processing;
- b. manufacturing and operations;
- c. transportation;
- d. product use and maintenance;
- e. energy use (including energy sources, such as electricity, that were themselves created using processes that have impacts associated with them); and
- f. waste and end-of-life management.

The lifecycle impact guidelines address both the economic and environmental impacts arising from the provision of products, such as materials consumption, water consumption, energy efficiency, greenhouse gas and other air emissions, acidification, eutrophication, human health toxicity, and eco-toxicity that may be associated with the life cycle of products. The purpose of the economic or cost benefit analysis is to provide a range of direct and indirect costs for the

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alternatives under study in comparison to the product containing the prioritized chemical of concern. The economic analysis will use the same boundaries and specific alternatives as the lifecycle assessment. The results from both the economic and environmental analyses will then be used to inform the alternatives analysis.

The alternatives analysis shall be conducted using a multi-stage approach to conduct comparisons among alternatives. In the first stage the consumer product that contains one or more high priority chemicals of concern and its alternative(s) are compared according to the attribute(s) that cause the chemical of concern to be identified as a high priority. Only those alternatives that represent an improvement over the high priority chemical of concern with regard to this attribute will proceed to the next stage of the assessment.

In the second stage of the assessment the subject product and its alternatives are compared according to the remaining health and ecological impact attributes and those lifecycle attributes that address health and environmental impacts. Only those alternatives that represent an improvement over the product with the high priority chemical of concern with regard to attributes that assess health and ecological impacts will proceed to the next stage of the assessment.

In the third stage of the assessment the remaining lifecycle attributes and of the alternatives are evaluated and the subject product and its alternatives are ranked by assigning a high, medium or low impact assessment in each of the following impact categories:

- Health and ecological impact criteria
- Lifecycle impact criteria
- The twelve principles of Green Chemistry

The alternatives analysis shall identify any alternatives with a more favorable impact than the subject product or chemical of concern. When the [manufacturer] submits the completed alternatives analysis to the Toxics Information Clearinghouse, it shall also provide a plan and schedule for implementing the most favorable alternative or a detailed justification for not selecting a more favorable alternative. The outcome of the alternatives analysis will be categorized and assigned to the appropriate regulatory response(s).

#### SECTION 6. REGULATORY RESPONSES

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Upon the completion of the alternatives analysis as defined in Section 5 above, the [manufacturer] must comply with all of the following:

- 1) **No further action.** (a) The [manufacturer] provides DTSC electronic notification pursuant to subsection ( ) that an alternatives analysis has been performed pursuant to section 5(X) and the assessment is:

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- (1) made available to DTSC upon request within 30 days,
- (2) verifiable by a third party,
- (3) risk of exposure is mitigated through compliance with subsections (2) thru (9).

(b) in complying with section 6(1)(a) a manufacturer, supplier, distributor or retailer of a consumer product may arrange for the information to be provided by a manufacturer, supplier, and/or distributor.

(c) If the manufacturer, supplier, and/or distributor does not or can not provide the necessary information and the retailer elects to place the consumer product on its retail shelves the retailer must obtain the information and make the information available as specified in section ( ) in the Toxics Clearinghouse.

- 2) **Additional information.** Any [manufacturer] who intends to use a prioritized chemical of concern for which there is insufficient data to meet the requirements of this part shall:
  - a) File an electronic notification with the following information: name, physical location of entity, name of contact person, names and types of chemicals, volume(s) of chemical being used, types of products being manufactured or sold, and
  - b) Comply with subsections (7) and within 18 months days of filing notification comply with subsection (1) by filing notification of compliance.
- 3) **Labeling.** Any [manufacturer] shall:
  - a) On an after January 1, 2012, label all consumer products meeting one of the following criteria:
    - i) a prioritized chemical of concern is present in the consumer product that exceeds state and federal standards that are protective of human health and the environment (such as a federal standards, FDA, Proposition 65 ,MADL, safe harbor number, etc.),
    - ii) reclamation of the consumer product at the end of life is necessary to mitigate long-term human health and or ecological risks,
    - iii) reclamation of product at end of life is necessary to eliminate need for continued extraction of virgin materials.
  - b) Ensure that the label conveys, with an appropriate symbol and or in the appropriate language, the following:
    - i) Warning to use product only as intended,
    - ii) End of life management requirements in accordance with subsection (7),
    - iii) Carbon foot print metrics in accordance \_\_\_\_\_,
    - iv) Permanently labeled with a logo or statement that product exceeds state and or federal levels for the prioritized chemical of concern.

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- c) In complying with the requirements of subsection (3)(a), the [manufacturer] shall obtain the information prior to introducing the product into the state.
- 4) **Restrictions.** Prioritized chemicals of concern are restricted for use if the presence of the prioritized chemical of concern in people or the environment has been documented through biomonitoring, ecological, and epidemiological data and the data indicates a risk to a sensitive subpopulation, ecological receptor, or environmental damage.
- a) In complying with this subsection, a [manufacturer] shall make available detailed chemical information on a representative sample of the consumer product on its website site, and the Toxics Information Clearinghouse.
- b) A [manufacturer] shall limit the use of the prioritized chemical of concern to the applications as listed on Appendix A, which shall be amended periodically by the department as new information becomes available and exposure to the priority chemical of concern through the use of the consumer product can be reasonably mitigated by complying with subsections (3), (6) and (7).
- c) A feasible alternative exists but requires further research and development and the manufacturer or retailer can demonstrate participation in collaborative research on the prioritized chemical of concern.
- 5) **Prohibitions.** On and after January 01, 2014, products containing prioritized chemicals of concern are prohibited from sale, and/or distribution where the risk can not be reasonably mitigated by complying with subsections (3), (6), and (7) a feasible alternative exists and the following apply:
- a) Data on the priority chemical of concern demonstrates an adverse health effect to a sensitive subpopulation and/or ecological receptor,
- b) The consumer product is intended for a sensitive sub population and the subpopulation will be exposed to the priority chemical through foreseeable use of the product,
- c) A sensitive subpopulation can be reasonably exposed to the priority chemical in a consumer product through foreseeable use of product in the household, workplace and/or place of care (i.e., childcare, schools, hospitals),
- 6) **Engineered Safety Measures.** Where substitution of a prioritized chemical of concern is not feasible because the performance of the product would be unreasonably compromised and is essential for the intended purpose and use, the [manufacturer] shall design the consumer product with the necessary engineering controls to enclose the hazard and prevent exposure under normal operations. Where complete enclosure is not feasible, clear instructions on the use of the product should be provided to reduce exposure to the hazard in normal operations.

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- a) Specific applications
  - b) Chemical of concern is integrally contained within the structure, formulation, mixture, or composition of the product (e.g., lead in vinyl versus toys with lead solder)
  - c) Product is used as intended
- 7) **End-of-Life Management.** In order to manage consumer products that have reached the end of their useful life, [manufacturers] shall offer a variety of take back programs that ensure that the consumer product is managed in an environmentally sound manner. End-of-life management programs shall be easy to understand and readily accessible to consumers.
- a) [Manufacturers] shall, when placing products on the market, provide a financial guarantee for the management of the products they produce as specified in subsection (8) to fund research and development of the products manufactured or other products necessitating an immediate response.
  - b) [Manufacturers], in collaboration with retailers, shall implement a public education program, for consumer products that contain chemicals of concern for which the provisions of subsection (3) and (6) have been used to mitigate hazard and or exposure.
  - c) [Manufacturers] shall assist retailers in creating an in-store recycling program for the collection and recycling of consumer products with prioritized chemical of concern. The program shall include:
    - i) Labeling consumer products that require end-of-life management with “return to the store for recycling;”
    - ii) Placement of recycling bins at retail centers in visible and accessible locations for consumers;
  - d) Compensation to retailer and centers for administration of recycling program.
  - e) [Manufacturers] shall, every two years, provide an electronic report to the Toxics Information Clearinghouse containing the following:
    - i) amount of products placed on the market over two year period by total tonnage,
    - ii) amount of products recovered for recycling over the two year period.
- 8) **Research and Development.** In order to recognize and reward innovations and foster the development of new technologies, this subpart may be waived if the [manufacturer] can demonstrate that research is in progress for the prioritized chemical of concern, and its alternatives, through a collaboration with other users of the prioritized chemical of concern or by an independent party who has provided documentation verifying the above.
- a) Parties seeking to apply for research and development grants shall provide a written research and development notice and shall specify:
    - i) The substantive elements of the research and development program, which shall include but is not limited to:
      - (1) Identification and nature of research on a specific product and or application of a prioritized chemical of concern,
      - (2) Design of product with chemicals that are not priority chemicals of concern,

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- (3) Use of chemical ingredients that are restorative of the environment,
- (4) Design of product for ease of dismantling, reclamation, recycling, and remanufacture,
- (5) Design products that optimize use of recycled materials,
- (6) Design products with less mass,
- (7) Design products with longer life (and add service after the sale),
- (8) Reduce packaging,
- (9) Redesign products to be sustainable throughout product life cycle
- (10) Other criteria as deemed necessary and appropriate including but not limited to:

- (A) Prevent waste rather than treating it or cleaning it up.
- (B) Incorporate all materials used in the manufacturing process in the final product.
- (C) Use synthetic methods that generate substances with little or no toxicity to people or the environment.
- (D) Design chemical products to be effective, but reduce toxicity.
- (E) Phase-out solvents and auxiliary substances when possible.
- (F) Use energy efficient processes, at ambient temperature and pressure, to reduce costs and environmental impacts.
- (G) Use renewable raw materials for feedstocks.
- (H) Reuse chemical intermediates and blocking agents to reduce or eliminate waste.
- (I) Select catalysts that carry out a single reaction many times instead of less efficient reagents.
- (J) Use chemicals that readily break down into innocuous substances in the environment.
- (K) Develop better analytical techniques for real-time monitoring to reduce hazardous substances.
- (L) Use chemicals with low risk for accidents, explosions and fires.

- ii) The expected amount of time required for each substantive element;
- iii) The processes, pollution control equipment, and emissions which are likely to be affected by the program;
- iv) Potential or expected benefits of the program; and
- v) The basis upon which the results of the program will be evaluated.

- b) The research and development program being undertaken shall include a provision for the employment of qualified independent firm(s) to prepare written reports at least annually which evaluates each completed significant stage of the research and development program, including all relevant information and data generated by the program.

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#### 9) Continuous Improvement.

- a) Each [manufacturer] shall conduct an active program to continuously review the effectiveness of its alternatives assessments.
- b) An annual electronic report/questionnaire, detailing the results of the review shall be accessible via the Toxics Information Clearinghouse.
- c) The report shall include:
  - i) Identification of specific targets for reduction of:
    - (1) virgin materials
    - (2) energy use,
    - (3) greenhouse gas emissions,
    - (4) water use, and
    - (5) solid and hazardous waste.
  - ii) Specific metrics identified by the department.

#### SECTION 7. ENFORCEMENT

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This rule applies to *any consumer product offered for sale or use in the State of California*. The rule is enforceable pursuant to the provisions of Chapter 6.5 of the Health and Safety code.

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### Statutory Definitions (Excerpted)

CALIFORNIA HEALTH AND SAFETY CODE

SECTION 25251

For purposes of this article, the following definitions shall apply:

(a) "Clearinghouse" means the Toxics Information Clearinghouse established pursuant to Section 25256.

(b) "Council" means the California Environmental Policy Council established pursuant to subdivision (b) of Section 71017 of the Public Resources Code.

(c) "Office" means Office of Environmental Health Hazard Assessment.

(d) "Panel" means the Green Ribbon Science Panel established pursuant to Section 25254.

(e) "Consumer product" means a product or part of the product that is used, brought, or leased for use by a person for any purposes. "Consumer product" does not include any of the following:

(1) A dangerous drug or dangerous device as defined in Section 4022 of the Business of Professions Code.

(2) Dental restorative materials as defined in subdivision (b) of Section 1648.20 of the Business and Professions Code.

(3) A device as defined in Section 4023 of the Business of Professions Code.

(4) A food as defined in subdivision (a) of Section 109935.

(5) The packaging associated with any of the items specified in paragraph (1), (2), or (3).

(6) A pesticide as defined in Section 12753 of the Food and Agricultural Code or the Federal Insecticide, Fungicide and Rodenticide Act (7 U.S.C. Sec. 136 and following).

(7) Mercury-containing lights defined as mercury-containing lamps, bulbs, tubes, or other electric devices that provide functional illumination.

(f) This section shall remain in effect only until December 31, 2011, and as of that date is repealed, unless a later enacted statute, that is enacted before December 31, 2011, deletes or extends that date.



## QUESTIONS and CONCERNS RAISED IN PUBLIC WORKSHOPS REGARDING AB1879 REGULATORY PACKAGE DEVELOPMENT

### INTRODUCTION

The California Department of Toxic Substances Control is developing Rules for Safer Alternatives to Chemicals of Concern in Consumer Products, pursuant to AB 1879 (Chapter 559, Statutes of 2008).

Great efforts have been taken to initiate an in-depth and thoughtful discussion of options, to seek widespread input, and to involve all interested parties, stakeholders and the public in this process. A Wiki was used to gather initial thoughts and suggestions online. Several public workshops were held. A draft Straw Proposal was developed and posted on the DTSC website and discussed at several more public workshops. Guidance was sought from the Green Ribbon Science Panel at two day-long meetings followed by yet another public workshop. The multitude of comments received have been compiled and considered as DTSC staff weigh the various options for promulgating rules that achieve the ultimate goal of decreasing toxics in consumer products to protect public health and the environment.

The following synopsis of major issues raised during the past several months is provided to highlight questions that must be addressed as the final draft rules are completed. DTSC is sharing this synopsis of the wide range of questions, concerns and options raised in the public workshops so that all interested parties are aware of the areas DTSC will focus on in developing these rules, and to continue seeking examples from knowledgeable parties of *specific* processes and language that can be included in the final draft rules.

DTSC urges and welcomes a more focused response from interested parties of actual language and specific processes to be considered in this next phase of decision-making. As staff work toward completing the final rule package that will ultimately be subject to the state's formal Administrative Procedures Act (APA) process, DTSC welcomes continued and focused reaction to these various issues. DTSC will have additional public review of the draft proposed rules prior to beginning the formal APA process.

### QUESTIONS and CONCERNS RAISED

#### 1. Scope, Applicability, and Starting Point

Scope of the program must be better defined and narrowed to allow for a pragmatic, implementable, and realistic program.

#### *Questions:*

##### **Chemicals**

- 1.1. Should *chemicals* be the entry point for determining which *consumer products* are regulated?
- 1.2. Which chemicals should be addressed first? What objective criteria should be applied to make that determination?
- 1.3. Should chemicals be grouped, or phased, by sub-type or class (such as surfactant, preservative, insulator, plasticizer, etc. or some other grouping scheme)? If so, what are those groups, phases, or sub-types?
- 1.4. How many chemicals would be included in the first collection (suite) of chemicals in the initial rule? In the second rule? In subsequent rules?

- 1.5. What is the process to move from a *chemical* to a particular *consumer product* for alternatives analysis? How is that done and by whom? How long does that process take?
- 1.6. How many *consumer products* would result from that first suite of chemicals? From subsequent suites?

#### **Lists of lists**

- 1.7. Should “lists of lists” of chemicals be the entry point for determining which consumer products are regulated?
- 1.8. Which government lists should be used? For what purpose(s)?
- 1.9. Which authoritative bodies’ lists should be used? For what purpose(s)?
- 1.10. What is the process to move from a chemical on a list to a particular consumer product for alternatives analysis? How is that done and by whom? How long does that process take?

#### **Product categories**

- 1.11. Should *product categories* be the entry point for determining which consumer products are regulated?
- 1.12. What are the highest priority categories? Why?
- 1.13. How are product categories defined—consistently across industry? What objective criteria define each category?
- 1.14. Should products be grouped, or phased, by sub-type? If so, what are those groups, phases, or sub-types?
- 1.15. How many discrete products are included in each category, group, or sub-type?

#### **Integrated entry pathway**

- 1.16. How should *chemicals* and *products* be combined as an integrated entry point?
- 1.17. Which specific chemicals and specific consumer products should be in the first rulemaking? In subsequent rules?
- 1.18. What is the “intersection” between *chemical* and *product*? How is that intersection determined? By whom? How would an integrated mechanism work?
- 1.19. How many *consumer products* would be included?
- 1.20. What information is required so the mechanism would function effectively and efficiently?
- 1.21. Who has such information?

## **2. Exemption**

Many stakeholders commented that certain uses of specific chemicals should be exempt from the regulation when it can be shown that a specific use of a chemical does not pose a threat to human health, safety, or the environment.

#### ***Questions:***

- 2.1. What are the pros and cons of including a possible exemption for a chemical or chemical ingredient in a consumer product which presents:
  - 2.1.1. an insignificant level of hazard?
  - 2.1.2. for which exposure is adequately controlled through product design and manufacture?
- 2.2. Should “de minimis” quantities of a chemical be a consideration for an exemption? If so how? How much (what quantity)?
- 2.3. Should “de minimis” instead be used in the prioritization process? If so, how?

## **3. Hazard Traits**

Some stakeholders have commented that the list of categories is too broad. Others say the initial end-points reflect chronic human health effects and minimize or ignore ecological and other effects. Stakeholders commented that fewer hazard end-points should be used initially and others phased-in via subsequent rulemaking.

#### ***Questions:***

- 3.1. Which hazard end-points should be the initial priority? Why?

- 3.2. How and when should other end-points be considered?
- 3.3. Which end-points should be added, deleted, or changed? Why?
- 3.4. Should end-points be grouped—such as chronic and acute human health, ecological effects, lethal and sub-lethal, sensitivity, etc.? What are those groups?
- 3.5. Who should decide? OEHHA? A particular authoritative body for a respective end-point (such as IARC for cancer)?
- 3.6. How should hazard trait information be used in prioritization? In alternatives assessment? In regulatory response?
- 3.7. How much time should be allowed for hazard characterization?
- 3.8. Does this time period differ by product category (i.e., chemical formulation versus manufactured article, relative to product cycle, etc.)?
- 3.9. If so, how should those time differences be addressed in the rule?
- 3.10. Should the Toxics Information Clearinghouse be linked to the required processes? If so, how and when? In what way?
- 3.11. Once the hazard end-points for chemical ingredients in a consumer product are determined, what information should be provided to the supply chain for that product? How and when should that information be shared?

#### 4. Data Requirements

How should data requirements be defined to avoid broad, unclear, or should specify particular test methods.

##### *Questions:*

- 4.1. How could the data requirements be made more specific to improve the hazard characterization step?
- 4.2. What types of data should not be allowed or used in characterizing a hazard end-point of a chemical ingredient in a consumer product?
- 4.3. Should specific test methods be required? If so, which ones?
- 4.4. How much time should be allowed to conduct testing and generate required data—where no data now exists?

#### 5. Prioritization

Should DTSC consider other criteria for prioritization than the ones listed below?

- Priority 1: Anticipated to be released during use or disposal, or to which humans are being exposed.
- Priority 2: Will not be released during use, but may be released after disposal.
- Priority 3: Will not be released during use or disposal.

##### *Questions:*

- 5.1. What criteria should be used to prioritize and determine *which consumer products* must conduct alternatives analysis and the resulting regulatory response?
- 5.2. Should “de minimis” quantities of chemicals be included in a prioritization process? If so, how?
- 5.3. Should tiers be included in prioritization? What are those tiers?
- 5.4. Should phasing be part of prioritization? What are those phases?
- 5.5. Should risk considerations be included in a prioritization scheme? If so, which risk considerations? How and by whom?
- 5.6. Should exposure considerations be included in a prioritization scheme? If so, which exposure considerations? How and by whom?
- 5.7. Should market share and unit volume be included in prioritization (i.e., target most widely used consumer products)?
- 5.8. Who should determine priorities?

- 5.9. Should the priorities be set forth directly in the rule? Alternatively, should a recurring public process to set priorities be prescribed in the rule?
- 5.10. Once the hazard end-points and prioritization of chemical ingredients, as chemicals of concern, in a consumer product is completed, what information should be shared with the supply chain for that consumer product?
- 5.11. How and when should this information be provided? To whom in the supply chain?

## 6. Alternatives Assessment

Because a wide variety of products would potentially contain a variety of chemicals of concern, a one-size-fits-all analysis likely would not be very informative. Instead, a more useful alternatives analysis will likely be process- and product-specific; or should a tiered approach to alternative assessments be used?

### *Questions:*

- 6.1. Should the alternatives analysis process consider different factors for different types of products? If so, what differences would you suggest and for what types of products?
- 6.2. Should the alternatives analysis process provide a special process or special provisions for products that have existing ongoing programs for evaluating and comparing alternatives? If so, what would you suggest this process or provisions would be and what would be the conditions for allowing them?

A potentially huge number of products may be identified that contain a potentially huge number of chemicals of concern.

- 6.3. Should the number of consumer products required to complete an alternatives assessment be managed in some way in the alternatives analysis process? If so, in what way?
- 6.4. If DTSC selected a process that includes various levels or types of alternatives analysis requirements for various situations, what should those situations be and what should be included in the alternatives analysis process for each of the different levels?
- 6.5. Are there situations when an alternatives analysis should be expedited or eliminated? If so, what are the conditions of such situations? What would be included in an expedited alternatives analysis?
- 6.6. If an alternatives analysis is not required for certain products or alternatives, how will potentially regrettable or unforeseen impacts of alternatives be identified? Should they be identified?
- 6.7. How should potential alternatives be defined? What types of alternatives should be required to be considered in the alternatives analysis? What should be done if no potential alternatives exist?

The alternatives analysis process is likely to include a comparison step in which dissimilar impacts are compared for the consumer product and potential alternatives. In this step impacts associated with hazard, exposure, environmental, economic and other life cycle factors will need to be compared so that a determination of the preferred option(s) can be identified.

- 6.8. How should dissimilar impacts associated with the consumer product and potential alternatives be compared after the impacts of each have been characterized? What format should be used? Would there be decision rules, and if so, what would they be? Are some factors more important than others?
- 6.9. If DTSC creates heuristic decision rules for comparing the impacts associated with the consumer product and the alternatives, what should these rules be? What values should these rules reflect?
- 6.10. Should the comparison step in the alternatives analysis result in an identification of a "preferred" alternative? Which is most appropriate? How would you suggest defining "preferred" alternative?
- 6.11. Should the process require that a "preferred" alternative be adopted in lieu of that original consumer product? Who should decide if an alternative should be implemented and how should it be required?

If it is assumed that a manufacturer of a consumer product that contains a chemical of concern is in the best position to know or to obtain the information needed to evaluate the product and its potential alternatives, the manufacturer

could perform the analysis. However, several stakeholders assert that manufacturers may not conduct the evaluation objectively or may not seriously consider all potential alternatives.

- 6.12. Who should be required to perform the alternatives analysis for a particular consumer product and why?
- 6.13. How much discretion should the person performing the analysis have in making determinations in the analysis, including but not limited to the type and magnitude of the impacts and the selection of an alternative or other course of action? Should there be standards governing these determinations, and if so, what should they be?
- 6.14. How should DTSC verify that an alternatives analysis is adequate and complete?
- 6.15. If DTSC creates a third party system for performing alternatives assessment, what requirements should be specified for the third party and for the alternatives analysis? Should this system be mandatory? Should the third party requirements specify any standards for the analysis or the third party? If so, would these standards be?
- 6.16. Should the alternatives analysis require the same alternatives to be considered for products containing the same chemical of concern that may be produced by different manufacturers and different processes?
- 6.17. Should the alternatives analysis process include provisions that allow transparency and public comment with regard to the alternatives analysis? If so, how much of the analysis should be made public and how should the public comments be incorporated into the process?
- 6.18. Should a provision be included in the alternatives analysis process that will allow others in the marketplace to benefit from alternatives analyses that have already been completed for similar products? If so, what would this provision be?

Although a full life-cycle analysis is known to be a highly resource-intensive exercise, the statute requires the alternatives analysis process to be developed using life cycle tools and that the process should be simplified and accessible.

- 6.19. How much time should be allowed to complete an alternatives assessment? Should the timeframe be different depending on the type of product, such as a chemical formulation, like a cleaning product, or a manufactured item that is comprised of assembled parts, like a toy? If so, what types of differences should be allowed, and what types of products should they apply to?
- 6.20. Should a "beta" test of the alternatives analysis process be included in the regulations? If so, what would the provisions of such a test be? How would the results of the test be incorporated into the required alternatives analysis process?

## 7. Regulatory Responses

The statute requires that the regulations specify response actions which include:

- Not requiring any action.
- Imposing requirements to provide additional information needed to assess a chemical of concern and its potential alternatives.
- Imposing requirements on the labeling or other type of consumer product information.
- Imposing a restriction on the use of the chemical of concern in the consumer product.
- Prohibiting the use of the chemical of concern in the consumer product.
- Imposing requirements that control access to or limit exposure to the chemical of concern in the consumer product.
- Imposing requirements for the manufacturer to manage the product at the end of its useful life, including recycling or responsible disposal of the consumer product.
- Imposing a requirement to fund green chemistry challenge grants where no feasible safer alternative exists.
- Any other outcome the department determines accomplishes the requirements of this article.

### *Questions:*

The law requires a response action following the completion of an alternative analysis. Criteria for actuating a response action and appropriate time frames for implementation are needed for each of these response actions.

- 7.1. What criteria should be used to impose each of the above listed response actions? Why?
- 7.2. What are appropriate timeframes for implementing each of these response actions? Are there circumstances or situations that should be considered to provide additional time for implementation?
- 7.3. What, if any, other specific outcomes would you recommend that DTSC consider?

The conclusion of the alternative analysis should provide the basis for the response actions. Criteria can be developed in regulation that would prescribe the specific response actions that a manufacturer must implement to appropriately address their specific alternative analysis findings (self-implementing). Some commenters object to the self-implementing approach because it allows the manufacturers to evaluate which response action would be most appropriate without DTSC or third party review.

- 7.4. If DTSC prescribes in regulation the response action that must be taken for a particular alternative analysis outcome, which response actions lend themselves to be implemented in this manner? Which response actions should be subject to DTSC discretion on a case by case basis? Why?
- 7.5. Should DTSC review an implementation plan which details how and when a response action will be conducted before a response action is implemented? Are there instances when review would not be necessary?

The statute allows prohibiting the use of a *chemical of concern in a consumer product*. Many commenters object to banning a chemical or chemicals given tremendous economic consequences to industry and consumers when no other response action is available when there are no potential alternatives. Conversely, many commenters are concerned that hazardous chemicals continued to be used in consumer products and should be banned more quickly.

- 7.6. What should be the criteria for prohibiting the use of a specific chemical in consumer products?
- 7.7. Should there be a separate regulatory process for imposing such a prohibition? If so, what should it be?

The conceptual outline identifies significant impacts as a trigger for response actions.

- 7.8. If a safer alternative does not exist, should response actions be used to reduce hazards, or reduce exposures? Why?
- 7.9. Should we have a response action to address significant life cycle impacts, or accelerate the development of safer alternatives?
- 7.10. How should we define "significant impact" for the purpose of requiring a response action?
- 7.11. If we can not define a significant impact, how can we link a specific response action to the findings in the alternative analysis?

The statute provides a requirement to fund green chemistry challenge grants where no feasible safer alternative exists.

- 7.12. What mechanisms are available to fund green chemistry challenge grants? What would these mechanisms entail?
- 7.13. How and by whom would these be funded?
- 7.14. How can we best use an option for research and development proposals? How could this be implemented?
- 7.15. Should a certification program be used to acknowledge innovation that results in safer product substitutions or other advances that promote green chemistry? How would we develop this type of program?

A variance procedure would allow for modifications of provisions that address issues that have not been anticipated. Many commenters feel that this will be a way for manufacturers to defer the implementation of the regulations while creating an overwhelming workload for DTSC.

7.16. In an effort to accommodate very different situations, does a variance adequately allow DTSC to accommodate extensions of a deadline, exclusions based on a de minimis threshold, or modifications of a response action? What should the criteria be?

## 8. Terms and Definitions

Clear and meaningful definitions of key terms are necessary to ensure the success of the regulation.

### *Questions:*

- 8.1. How should the following terms be defined?
  - 8.1.1. "Authoritative body"
  - 8.1.2. "Chemical"
  - 8.1.3. "Chemical ingredient:"
  - 8.1.4. "Chemical of concern"
  - 8.1.5. "Consumer product"
  - 8.1.6. "Manufacturer"

## 9. Role of State Government

How broad a role should state government have in implementing this rule?

### *Questions:*

- 9.1. What is the proper role for state government for this rule?
- 9.2. Should DTSC set rules for required processes?
- 9.3. Should DTSC conduct those processes directly?
- 9.4. Should DTSC mandate standards, protocols, and methodologies for those processes? If so, what should be included in the initial rule? Which of these must be developed further (by the public or private sector, or both) before it can be applied as a general rule of applicability?
- 9.5. Should DTSC test consumer products?
- 9.6. How should DTSC monitor the overall system?
- 9.7. Should the initial rule be expanded or revised periodically—to add chemicals or products, to revise procedures, to set performance or professional standards, etc.?
- 9.8. If so, what should be part of the first rulemaking? What should be part of the second and third rulemakings?
- 9.9. How should the subject(s) of those subsequent rulemakings be determined?
- 9.10. Which *consumer products* are also regulated by other governmental agencies?
- 9.11. Should a fee or assessment be levied by state government?
- 9.12. If so, how high should the fee be set?
- 9.13. Who should be assessed that fee?



CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY  
**Department of Toxic Substances Control**

## News Release

T – 06 – 09

**Maziar Movassaghi, Acting Director**

**FOR IMMEDIATE RELEASE**

April 9, 2009

Contact: Angela Blanchette  
(510) 540-3732

### **DTSC Announces Members of New Green Ribbon Science Panel for California's Green Chemistry Program**

Sacramento, CA – Cal/EPA's Department of Toxic Substances Control (DTSC) today announced the selection of 27 members to the state's new Green Ribbon Science Panel, an advisory panel created for California's Green Chemistry program, an innovative approach to removing or reducing toxic chemicals in products sold in California.

The Green Ribbon Science Panel was established with passage of two landmark Green Chemistry laws signed last year by California Governor Arnold Schwarzenegger (AB 1879 - Feuer and SB 509 - Simitian). The Panel will provide advice and act as a resource to DTSC and the California Environmental Policy Council pursuant to AB 1879, which directs the Department to develop regulations that: (1) create analytical methods for safer chemical alternatives, and (2) identify and prioritize chemicals of concern. Panel members will serve staggered three-year terms and may be reappointed with no limitations.

"I am pleased to make today's announcement and trust that the distinguished panelists will soundly advise on development of the state's Green Chemistry regulations," said DTSC Acting Director Maziar Movassaghi. "Since the Green Chemistry Initiative was launched in 2007, the Department has been honored to work on this exciting endeavor to bring safer, less toxic products into the marketplace. With our Green Chemistry efforts, California continues to be on the forefront of creating environmental policies with far-reaching global impacts."

Panel duties include:

- Advising DTSC and the Council on scientific and technical matters in support of significantly reducing adverse health and environmental impacts of chemicals used in commerce, as well as the overall costs of those impacts to the state's society;
- Advising DTSC on the development green chemistry and chemicals policy recommendations and implementation strategies and details, and ensuring these recommendations are based on a strong scientific foundation;
- Advising DTSC and making recommendations for chemicals the panel views as priorities for which hazard traits and toxicological end-point data should be collected;
- Advising DTSC in the adoption of green chemistry regulations; and
- Advising DTSC on any other pertinent matter in implementing AB 1879, as determined by DTSC

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The Panel consists of members with expertise in the following areas:

Chemistry	Pollution Prevention	Materials Science
Chemical Engineering	Cleaner Production Methods	Nanotechnology
Environmental Law	Environmental Health	Chemical Synthesis
Toxicology	Public Health	Research
Public Policy	Risk Analysis	Maternal and Child Health

DTSC management selected the 27 panel members from more than 80 applicants based on the following criteria: education, expertise and practical experience in the fields shown above; experience serving on scientific and environmental policy advisory panels; and proven excellence with collaborative problem-solving skill and communication skills.

The initial meeting of the Panel will be held on April 29-30 at the Red Lion Inn in Sacramento. The Panel will meet a minimum of twice per year with additional meetings scheduled as needed.

Following is a list of members selected for the state's new Green Ribbon Science Panel:

- **Ken Geiser**, Ph.D., CO-CHAIR of the Panel, serves as Professor of Work Environment and as the Director of the Lowell Center for Sustainable Production at the University of Massachusetts, Lowell. He co-authored the Massachusetts Toxics Use Reduction Act and served as Director of the Massachusetts Toxics Use Reduction Institute from 1990 to 2003.
- **Deborah Raphael**, CO-CHAIR of the Panel, has spent the last 15 years working within local government to design and implement programs around the reduction of hazardous chemicals used in city operations and consumer products. She is the Program Manager for the City & County of San Francisco's Toxics Reduction and Green Building Programs.
- **William F. Carroll**, Ph.D., CO-CHAIR of the Panel, is a Vice President of Occidental Chemical Corporation and an Adjunct Industrial Professor of Chemistry at Indiana University. He contributed to the United Nations Environment Programme's Best Available Techniques/Best Environmental Practices Guidelines for implementation of the Stockholm Convention on Persistent Organic Pollutants. In 2005 he was President of the American Chemical Society.
- **Ann Blake**, Ph.D., is an independent consultant who has worked for 16 years in the area of environmental and public health regulation and chemicals policy reform at the local, regional, national and international levels. She worked for the California Environmental Protection Agency's Department of Toxic Substances Control as a hazardous waste inspector and Northern California Pollution Prevention Coordinator.
- **Jae Choi**, Ph.D., has more than 40 years experience in industry and has been recognized as a "Green" materials and chemistry subject matter expert at the Avaya company. He holds 26 U.S. patents and has five other U.S. patents pending.
- **Bruce R. Cords**, Ph.D., is Vice President for Environment, Food Safety and Public Health for Ecolab Inc., the world's leading provider of cleaning, food safety and infection prevention products and services. He serves as Chairman of the Board of Advisors of the University of Georgia's Center for Food Safety, and is a member of the Food Science and Nutrition Advisory Council at the University of Minnesota. Dr. Cords is a nationally recognized authority on foodborne disease and an industry expert on foodborne viruses.
- **George Daston**, Ph.D., is a Research Fellow overseeing human safety research at Procter & Gamble Company. He has served as President of the Teratology Society, Councilor of the Society of Toxicology, on the U.S. EPA Board of Scientific Counselors, National Toxicology Program Board of Scientific Counselors, National Research Council's Board of Environmental Studies and Toxicology, and National Children's Study Advisory Committee.
- **Tod Delaney**, Ph.D., is President of First Environment, Inc. and has more than 30 years of industry experience as a chemical and environmental health engineer. He currently serves as the

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International Convener for the new ISO 14066 standard for National Greenhouse and Energy Reporting System and as chairman of the board for the Business Council for Sustainable Energy.

- **Richard Denison**, Ph.D., is the Senior Scientist for the Environmental Defense Fund and has 25 years of experience in policy, hazard and risk assessment and management for chemicals and nanomaterials. Dr. Denison recently served on California's Green Chemistry Initiative's Science Advisory Panel.
- **Arthur T. Fong**, Ph.D., is a senior scientist/toxicologist at IBM and a member of the IBM Corporate Environmental Affairs team. He is a member of the Steering Committee and Technical Committee of the U.S. EPA Flame Retardants in Printed Circuit Boards (PCBs) Partnership, and is co-lead of the Semiconductor Industry Association nanotechnology environmental health and safety working group to encourage responsible and sustainable development of nanotechnology and proactive safe nanotechnology worker protection practices.
- **Lauren Heine**, Ph.D., advises organizations seeking to integrate green chemistry and engineering into product and process design and development activities as Principal for the Lauren Heine Group and a Senior Science Advisor with Clean Production Action. She was previously the Director of Applied Science at GreenBlue where she directed the development of CleanGredients™, a unique, web-based information platform, developed in partnership with the U.S. EPA Design for the Environment Program
- **Dale Johnson**, Ph.D., is an Adjunct Professor in Molecular Toxicology at UC Berkeley and President & CEO of Emiliem, Inc. He has extensive experience in the healthcare industry working in pharmaceutical and biotechnology companies on drug discovery and development and risk/benefit assessments related to human health. He is a Diplomat of the American Board of Toxicology and co-editor of the journal *The Chemistry of Metabolic and Toxicological Processes, Current Opinion in Drug Discovery & Development*.
- **Michael Kirschner**, President of Design Chain Associates, LLC, has worked in engineering and engineering management for such electronics companies as Compaq, Tandem Computers, Intergraph, and Intel. Design Chain Associates helps manufacturers understand and develop proactive strategies and tactics to comply with international environmental regulations as well as customer and Non-Governmental Organization influences and requirements that impact their products.
- **Richard Liroff**, Ph.D., founded and serves as Executive Director of the Investor Environmental Health Network, a group of investment management organizations advised by environmental health advocates, working to reduce production and use of toxic chemicals by business. He is author/editor of a half-dozen books and more than 50 articles and reports on environmental policy.
- **Timothy F. Malloy**, J.D., is a Professor of Law, and a Faculty Director of the UCLA Law and Environmental Health Sustainable Technology Policy Program. He is a Co-Director of the School of Law's Frank G. Wells Environmental Law Clinic and a member of the UC Center for Environmental Implications of Nanotechnology.
- **Scott Matthews**, Ph.D., is the Research Director of the Green Design Institute and Associate Professor in the Departments of Civil and Environmental Engineering and Engineering and Public Policy at Carnegie Mellon University. Dr. Matthews serves as chair of the Committee on Sustainable Systems and Technology with the Institute of Electrical and Electronic Engineers.
- **Roger McFadden**, is the Chief Scientist for Staples CE and has worked as a formulating and consulting chemist and product design engineer for several product manufacturing companies in the U.S. and Canada. He is a charter member of the Green Chemistry Commerce Council (GC3).
- **Kelly Moran**, Ph.D., is President of TDC Environmental, LLC, an environmental consulting firm specializing in water quality and pollution prevention. She co-founded the Brake Pad Partnership and the Urban Pesticides Pollution Prevention Project and sits on the California Source Reduction Advisory Committee.
- **Oladele A. Ogunseitan**, Ph.D., M.P.H., is Professor and Chair in the Program in Public Health, College of Health Sciences at U.C. Irvine, where he is also a Professor of Social Ecology. He

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directs the Research and Education in Green Materials component of U.C.'s Systemwide Toxic Substances Research & Teaching Program. He is Principal Investigator of a National Science Foundation funded project on Biocomplexity in the Environment: Materials Use, Science, Engineering and Society (MUSES).

- **Robert Peoples**, Ph.D., is the Director of the American Chemical Society Green Chemistry Institute® and has been a member of American Chemical Society (ACS) for 35 years. He serves on several local and national boards including the Carpet America Recovery Effort, Georgia Pollution Prevention Advisory Board, and Green Standard.org. He is a member of several organizations including the National Recycling Coalition, Society of Plastics Engineers, and the American Chemical Society.
- **Julia Quint**, Ph.D., is a public health scientist and retired Chief of the Hazard Evaluation System and Information Service (HESIS), an occupational health program in the California Department of Public Health (CDPH). Julia currently serves on the Scientific Guidance Panel of the California Environmental Contaminant Biomonitoring Program, the Tracking Implementation Advisory Group of the California Environmental Health Tracking Program, the Cal/OSHA Health Experts Advisory Committee, and the National Academy of Sciences Committee on Tetrachloroethylene.
- **Julie Schoenung**, Ph.D., is a Professor in the Department of Chemical Engineering and Materials Science at U.C. Davis, and a Co-Director for the University of California Toxic Substances Research and Teaching Program Lead Campus in Green Materials.
- **Megan R. Schwarzman**, M.D., M.P.H, is a research scientist with the Program in Green Chemistry and Chemicals Policy at U.C. Berkeley Center for Occupational and Environmental Health (COEH), School of Public Health. She was a co-author of the 2008 report to Cal/EPA, *Green Chemistry: Cornerstone to a Sustainable California*.
- **Anne Wallin**, Ph.D., is the Director of Sustainable Chemistry for Dow Chemical Company and leads the company's Life Cycle Assessment Expert Group. She is a member of the External Advisory Board for the Graham Environmental Sustainability Institute at the University of Michigan and a co-author of several publications and patents.
- **John Warner**, Ph.D., is the President and CTO of the Warner Babcock Institute for Green Chemistry. He established the world's first Green Chemistry Ph.D. program at the University of Massachusetts-Boston and is co-author of the book *Green Chemistry: Theory and Practice*, which first described the *Twelve Principles of Green Chemistry*.
- **Michael P. Wilson**, Ph.D., M.P.H., is a research scientist at the Center for Occupational and Environmental Health (COEH), School of Public Health at U.C. Berkeley, where he conducts research and practice in environmental health sciences and science policy. He is the chief author of a 2006 UC report, commissioned by the California Legislature, *Green Chemistry in California: A Framework for Leadership in Chemicals Policy and Innovation*.
- **Julie Zimmerman**, Ph.D., is an Assistant Professor jointly appointed in the School of Engineering and Applied Science (Environmental Engineering Program) and the School of Forestry and Environment at Yale University. She also serves as the Associate Director for Research for the Center for Green Chemistry and Green Engineering at Yale.

For more biographical information on the state's Green Ribbon Science Panel members, visit DTSC's website at [http://www.dtsc.ca.gov/PollutionPrevention/GreenChemistryInitiative/Green\\_Ribbon\\_Bios.cfm](http://www.dtsc.ca.gov/PollutionPrevention/GreenChemistryInitiative/Green_Ribbon_Bios.cfm)

More information on the California Green Chemistry Initiative can be found on the Department's website at <http://www.dtsc.ca.gov/GreenChemistry>

###

FOR GENERAL INQUIRIES: Contact the Department of Toxic Substances Control by phone at (800) 728-6942 or visit [www.dtsc.ca.gov](http://www.dtsc.ca.gov). To report illegal handling, discharge, or disposal of hazardous waste, call the Waste Alert Hotline at (800) 698-6942.

***The mission of the Department of Toxic Substances Control is to protect public health, safety, and the environment from toxic harm.***



**Bay Area Hazardous Waste Management Facility Allocation Committee**

Administered by:  
**Association of Bay Area Governments**

101 Eighth Street, Oakland, CA 94607-4756  
<http://www.abag.ca.gov/hazwaste>

P. O. Box 2050, Oakland, CA 94604-2050  
510/464-7961

November 23, 2009

To: Hazardous Waste Management Facility Allocation Committee  
From: Ceil Scandone, Senior Regional Planner  
Re: Save the Bay Clean Bay Project

**Executive Summary**

Save the Bay was founded nearly 50 years ago to protect the Bay from landfill, pollution and other threats. The San Francisco Estuary Project (SFEP), which is staffed and managed by the Association of Bay Area Governments (ABAG), was founded in 1993 to develop and implement the Comprehensive Conservation and Management Plan for the San Francisco Bay – Delta Estuary. Save the Bay participated in the initial planning effort and has been a valued partner during the ensuing implementation.

In early 2009, SFEP/ABAG received a \$5 million Estuary 2100 grant from US EPA to improve the health of the Estuary. The grant is funding SFEP and a dozen non-profit and local agency partners, including Save the Bay, who are undertaking diverse efforts around the region.

Save the Bay staff members **Stephen Knight, Political Director** and **Amy Alton Ricard, Communications and Policy Associate** will make a presentation on their **Clean Bay Project**. They are seeking new municipal/county partners interested in working with the Clean Bay Project team to implement a pollution prevention project.

**Clean Bay Project**

One of the Estuary 2100 projects is Save the Bay's Clean Bay Project. As described on the attached flyer, the goal of the project is to assist local governments in their efforts to reduce pollution in the Bay. The projects Save the Bay is prepared to support have the potential to advance related interests, such as Extended Producer Responsibility, Environmentally Preferable Purchasing, Zero Waste, and Green Chemistry.

A key objective of the project is to replicate effective local government projects to accelerate implementation and save money. Save the Bay has identified innovative programs and developed tools and resources, such as the attached case study on the Styrofoam ban enacted by the City of Millbrae, which can help jurisdictions address a variety of pollution challenges.

A number of the efforts they are prepared to support are relevant to the interests of the Hazardous Waste Management Committee. These include assisting communities

## **Attachment C**

interested in instituting Styrofoam and plastic bag bans, reducing use of toxic pesticides, and promoting safe management of problem wastes such as pharmaceuticals.

Committee members may consider partnering with Save the Bay on projects in their own jurisdictions. They may also be interested in facilitating a Clean Bay Project presentation in their cities or counties for other jurisdictions who may benefit from their assistance.

Attachments:

Clean Bay Project flyer

PowerPoint presentation slides

Case Study: *Program Action: Require the use of biodegradable food containers*



Save The Bay launched the **Clean Bay Project** in 2008 to reduce runoff pollution in the Bay. To accomplish that objective, the Clean Bay Project helps Bay Area cities and counties replicate innovative and effective municipal pollution prevention programs by providing them with tools and resources that make it easier for the region's seven million residents to protect the Bay. The Clean Bay Project suite of programs is designed to be implemented by municipalities to reduce serious pollution threats.

The Clean Bay Project is made possible through funding provided by US EPA, San Francisco Bay Water Quality Improvement Fund, in partnership with the San Francisco Estuary Partnership/Association of Bay Area Governments.

Save The Bay will provide partner cities with the following:

- Case studies with model ordinances, cost estimates, and sample outreach materials
- Information for city councils
- Increased issue visibility and community support
- Workshops on program topics with municipal experts

Programs may already be in place to greater or lesser degrees in some municipalities. In these cases, Save The Bay can provide assistance with improving effectiveness, increasing scope, visibility and/or participation for those with existing programs.

For nearly 50 years, Save The Bay has been the premier organization working to protect San Francisco Bay from pollution, with the capacity to manage successful public outreach to local governments and to mobilize its 25,000 supporters to distribute and implement pollution reduction best management practices.

With municipalities increasingly moving toward policies such as Extended Producer Responsibility (EPR), Environmentally Preferable Purchasing (EPP), Zero Waste and Green Chemistry, Save The Bay's Clean Bay Project can help facilitate the implementation of programs that will meet these goals, assisting with on-the-ground projects for jurisdictions that are ready to take action.

Contact the Clean Bay Project at [cleanbay@saveSFbay.org](mailto:cleanbay@saveSFbay.org) or visit our website at [www.saveSFbay.org/cleanbayproject](http://www.saveSFbay.org/cleanbayproject)



*Funding provided by US EPA, San Francisco Bay Water Quality Improvement Fund, in partnership with the San Francisco Estuary Partnership/Association of Bay Area Governments.*



# The Clean Bay Project

- A suite of programs developed by municipalities to reduce runoff pollution.
- Bay Area cities and counties often have one or more programs, but no city appears to have them all.
- With 101 cities in the Bay Area, increasing these programs across the region is a sensible way reduce Bay pollution.
- Partner cities adopt one or two programs of their choice each year.



# Save The Bay provides:

## Program Actions

- Case studies on best practices
- Municipal experts
- Model ordinances
- Cost estimates



# Save The Bay provides:

- Annual workshop on program topics
- Information for city councils
- Sample outreach materials
- Increased visibility



## Clean Bay Project Workshop: How to Tackle Plastic Bag and Styrofoam Pollution

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### Program

**9:30am – Check-in**

**10am – Opening Remarks**

Save The Bay Executive Director, David Lewis  
San Jose Deputy Director of Environmental Services, Melody Tovar

**10:30 am – Morning panel: Styrofoam**

Ubiquitous polystyrene (Styrofoam) litter poses a severe risk to human health and the health of the Bay. This panel will discuss its harmful effects to the environment, why cities should consider a ban and how to execute it, and ways to make ordinances easier for businesses to implement.

**Panelists include:**

Miriam Gordon – Clean Water Action; Shelly Reider – City of Millbrae;  
Matt Clark – Biodegradable foodware manufacturer

**12pm – Lunch**

**1pm – Afternoon panel: Plastic bags**

An estimated one million plastic bags end up in the Bay every year where they smother wetland habitat, spoil water quality and degrade our quality of life. This panel will discuss serious environmental threats posed by plastic bags, statewide efforts to curb plastic bag pollution, local efforts to implement bans and perspectives from retailers.

**Panelists include:**

Bryan Early – Californians Against Waste; Phil Bobel – City of Palo Alto;  
Tim James – California Grocers Association

**2:15pm – Wrap-up**

*Each panel will include a 45 minute Q&A session*

Wednesday, October 28, 2009



- ▶ [San Francisco Bay Oil Spill](#)
- ▶ [Bay Trash Hotspots](#)
- ▶ [Redwood City Salt Ponds](#)
- ▶ [Clean Bay Project](#)
  - [Clean Bay Project - Municipal Resources](#)
- ▶ [Pollution Prevention](#)
- ▶ [Restoring Wetlands](#)
- ▶ [Healthy Bay Beaches](#)
- ▶ [South Bay Salt Ponds](#)
- ▶ [Protecting the Bay Shoreline](#)

## THE BAY CLASSROOM

### GET INVOLVED

- ▶ [Take Action](#)
- ▶ [Volunteer](#)
- ▶ [Sign up for the Bay Savers Email Action Network](#)

GO

DONATE NOW



[San Francisco](#) > [Bay Issues](#) > [Clean Bay Project](#) > Clean Bay Project - Municipal Resources

## Municipal Resources

### Clean Bay Project Partnerships

The Clean Bay Project is a suite of the most effective pollution prevention programs developed and implemented by municipalities that Save The Bay recommends all cities adopt. Save The Bay will work with cities to implement programs by providing:

- Case studies with model ordinances, cost estimates and expert contact information
- Knowledge-sharing events for city staff to discuss program topics
- Information for city councils
- Sample outreach materials
- Increased community visibility

Programs may already be in place to greater or lesser degrees in some municipalities. In this case, Save The Bay can provide assistance with improving program effectiveness, increasing scope, visibility and/or participation for those with existing programs.

Cities interested in becoming a Clean Bay Project partner should contact the Clean Bay Project at [cleanbay@saveSFbay.org](mailto:cleanbay@saveSFbay.org).

### Clean Bay Project Materials

#### POLYSTYRENE

##### Expanded Polystyrene (Styrofoam) Workshop Presentations

- [Miriam Gordon, Clean Water Action \(PDF\)](#)
- [Shelly Reider, City of Millbrae \(PDF\)](#)
- [Matt Clark, Bridge-Gate Alliance \(PDF\)](#)

##### Additional Resources

- [Styrofoam Ban Ordinance Case Study \(PDF\)](#)
- [Expanded Polystyrene Foam Litter Fact Sheet – Clean Water Action \(PDF\)](#)
- [Sustainable Food Service Ware Fact Sheet – Millbrae \(PDF\)](#)
- [Biodegradable and Compostable Food Ware Brochure – Richmond \(PDF\)](#)
- [No Green Washing – Bridge-Gate Alliance \(PDF\)](#)
- [Myth vs. Fact: Polystyrene and Foamed Polystyrene Food Service Packaging \(PDF\)](#)
- [San Francisco Examiner, Styrofoam ban makes impact \(PDF\)](#)
- [City of Millbrae](#)

#### PLASTIC BAGS

##### Plastic Bag Workshop Presentations

- [Bryan Early, Californians Against Waste \(PDF\)](#)
- [Phil Bobel, City of Palo Alto \(PDF\)](#)

##### Additional Resources

- [Single-use bag Reduction Ordinance Case Study \(PDF\)](#)
- [Plastic Bag Litter Fact Sheet \(PDF\)](#)
- [Plastic Bag Reduction Fact Sheet – Palo Alto \(PDF\)](#)



# Single-use bags

## San Jose Mercury News

San Jose council votes to ban most plastic and paper bags beginning in 2011

By Tracy Seipel  
September 23, 2009

ORDINANCE NO. -N.S.  
ADDING CHAPTER 11.37 TO THE BERKELEY MUNICIPAL CODE TO REDUCE SINGLE USE PLASTIC AND PAPER CHECKOUT BAGS  
BE IT ORDAINED by the City Council of the City of Berkeley as follows:  
Section 1: That Chapter 11.37 is hereby added to the Berkeley Municipal Code Title 11, Environmental Health, to read as follows:  
Chapter 11.37  
BERKELEY BAG REDUCTION ORDINANCE





# Polystyrene (Styrofoam) Bans



## Styrofoam ban makes impact

By John Upton  
June 16, 2008

ORDINANCE NO. 717

SUSTAINABLE FOOD SERVICE WARE  
ORDINANCE

AN ORDINANCE TO ADD CHAPTER 6.40 TO  
THE MILLBRAE MUNICIPAL CODE  
PROHIBITING THE USE OF POLYSTYRENE  
FOAM AND SOLID DISPOSABLE FOOD  
SERVICE WARE AND REQUIRING THE USE  
OF BIODEGRADABLE,  
COMPOSTABLE, REUSABLE OR  
RECYCLABLE FOOD SERVICE WARE BY  
FOOD VENDORS IN THE CITY

## Styrofoam™ and Plastic FoodWare





# Outreach to Date

- San Jose
- City of Alameda
- Palo Alto
- Marin County
- Berkeley
- City of Santa Clara
- Milpitas
- Richmond
- Bay Area Pollution Prevention Group (BAPPG)

# Program Details and Effectiveness

- Programs may already be in place to greater or lesser degrees in some municipalities.
- Save The Bay will provide assistance with improving effectiveness, increasing scope, visibility and/or participation for those with existing programs.





## **Program Action: Require the use of biodegradable food containers**

### **Situation Analysis:**

Plastic take-out containers are a major component of urban litter. These products are usually polystyrene or expanded polystyrene (such as Styrofoam), and often wind up in the Bay, where they break into small pieces fragment and leach toxins into the water. Take-out food and beverage containers, like Styrofoam cups, are some of the most ubiquitous trash items fouling the Bay and local waterways. Foamed polystyrene and plastic food packaging are also one of the biggest culprits in clogging municipal storm drains. These types of plastics and Styrofoam never biodegrade and will remain with us for thousands of years, harming wildlife and polluting our shores.

Studies have found that styrene, a cancer-causing and neurotoxic component of polystyrene, can leach into food and drink, posing a human health risk. A Danish study that examined the environmental impacts of various packaging materials (in the categories of energy consumption, greenhouse gas effect, and total environmental effect) determined that polystyrene has the second highest impact, behind aluminum.<sup>1</sup> Styrofoam products also pose a health threat to wildlife. At least 162 marine species worldwide have been reported to have consumed polystyrene and other litter. Wildlife that eat polystyrene suffer from loss of appetite, reduced nutrient absorption, and starvation.<sup>2</sup>

Polystyrene food service products have no appreciable recycling market. New products use only virgin, petroleum-based material with no recycled content.

Affordable alternatives include paper products with recycled content and re-useable, washable cups and containers. In addition, a wide variety of plastic-like containers made from non-petroleum-based sources like corn starch are available. Combined with an effective commercial compost program, these alternatives can reduce landfill loads and polystyrene and petroleum-based plastic pollution in the Bay and ocean.

State agencies have stressed the need to address urban litter through legislation and municipal ordinances. The California Ocean Protection Council (OPC) proposes a ban on polystyrene food containers as one of the top three priority actions for reducing marine debris.<sup>3</sup> Additionally, under the Water Board's 2009 Municipal Regional Stormwater NPDES Permit (MRP), permittees are repeatedly encouraged to include "any trash reduction ordinances that are being implemented" as part of their trash control measures and best management practices.<sup>4</sup> There have been high levels of public support for ordinances to eliminate polystyrene take-out food ware.

### **Model Program Case Study: Millbrae, CA:**

Recognizing the need to reduce pollution in local waterways and city streets, Millbrae adopted a ban on polystyrene food packaging in January 2008.

**What it does:** City ordinance requires all restaurants or sellers of take-out food to use only take-out containers that are reusable, biodegradable, compostable or recyclable under current city programs. Styrofoam and polystyrene plastics are prohibited. The ordinance includes cups, lids, straws, clamshells, plates, bowls, and utensils.

**How it was implemented:** City staff sent two informational reports to the City Council and prepared the city to address industry concerns. The Recycling & Waste Program created postcards and flyers to distribute to businesses and pursued discussions with the Chamber of Commerce prior to the ordinance adoption. The program offers online resources and materials to educate business owners about how to comply (Millbrae Sustainable Food Service Ware Ordinance & Information: <http://www.ci.millbrae.ca.us/index.aspx?page=236>). Enforcement is complaint-driven. The program enjoys a high rate of participation.

**Costs:** With estimated figures, for similar program in a city of approximately 150,000 residents:

<b>Staff Time</b>	<b>Based on</b>	<b>Estimated cost</b>
Staff time for ordinance, outreach and print materials	6 months of .25 FTE staff at \$60K annual salary and benefits	\$9,000
Translation of outreach materials	5 hours at \$100 per hour	\$500
Web staff time	2 months of .25 FTE staff at \$80K annual salary and benefits	\$3,000
City Attorney fees	Where applicable	\$0-\$2,500
Yearly staff time for complaint-driven enforcement	Mailing letters and making follow-up visits: periodic staff time	\$1,500
<b>Expenses</b>	<b>Based on</b>	<b>Estimated cost</b>
Printing & postage costs for initial outreach	1000 businesses, \$1.50 per letter	\$1,500
Mailing follow-up and enforcement letters	200 businesses, \$1.50 per letter	\$300
<b>Estimated Total</b>	<b>\$15,800 - \$18,300</b>	

**Contact:** Shelly Reider, Environmental Programs Manager, City of Millbrae: (650) 259-2444

### **Additional Program Information: San Francisco:**

We also recommend reviewing the City and County of San Francisco's ordinance, which may have useful findings and other helpful language for cities looking to draft their own legislation: [http://www.sfgov.org/site/uploadedfiles/fswr/documents\\_forms/FSWR\\_Ordinance295-06.pdf](http://www.sfgov.org/site/uploadedfiles/fswr/documents_forms/FSWR_Ordinance295-06.pdf)

**Enclosures:**

Millbrae ordinance and sample outreach materials.

**General Considerations:**

**CEQA:** Millbrae's ordinance includes an explanation of their exemption for the ordinance under California Environmental Quality Act (CEQA). This negative declaration clarifies the city's obligations and the impact of the ordinance for legal purposes.

**Addressing Industry Opposition:** Some plastics manufacturing corporations and their associations surprised cities early on by dispatching lobbyists to oppose these ordinances through letters and at public meetings. Now that cities expect this, it is easier to prepare to answer their arguments. Save The Bay can direct city staff to simple facts that refute plastic industry claims. Please see our Myth vs. Fact sheet for more information.

**Recycling as an alternative:** A polystyrene ban ordinance work best in coordination with a city's litter abatement, composting and recycling programs. It's important to note that most food service plastics are not easily or affordably recycled, because of the material itself, the lack of a market for recycled polystyrene and especially because food service plastics are soiled. The California Integrated Waste Management Board has said "There is no meaningful recycling of food service polystyrene." (2004 report to the Legislature.) Changing current recycling programs to include recycling food service polystyrene is not recommended.

**Helping to achieve municipal environmental goals:** Banning the use of polystyrene food containers can contribute to the overall environmental goals of municipalities. For those cities and counties engaging in Environmentally Preferable Purchasing or Extended Producer Responsibility initiatives, a Styrofoam ban is a step toward achieving sustainable material consumption and disposal. Because polystyrene is a major component of water pollution and coastal debris, eliminating its use will help municipalities attain their Zero Waste goals. Finally, a Styrofoam ban would address several components of a Climate Action Plan; eliminating this source of pollution will help protect wetland health, in turn protecting cities against rising sea levels. Reducing or eliminating local Styrofoam production also helps to reduce the amount of greenhouse gases entering the atmosphere.

**Please contact Save The Bay's Clean Bay Project program staff for additional resources, including sample ordinances, CEQA information, and examples of stakeholder outreach approaches and materials.**

**Policy Department**  
**510-452-9261 x118**  
[cleanbay@savesfbay.org](mailto:cleanbay@savesfbay.org)

Revised 10/26/09

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<sup>1</sup> California Integrated Waste Management Board (CIWMB). *Use and Disposal of Polystyrene in California* (2004).

<sup>2</sup> City and County of San Francisco, Food Service Waste Reduction Ordinance (Ordinance No 295-06).

<sup>3</sup> Implementation Strategy to Reduce & Prevent Ocean Litter (2008).

<sup>4</sup> MRP Section C.10, pages 84, 86.

**ORDINANCE NO. 717**

**SUSTAINABLE FOOD SERVICE WARE ORDINANCE**

**AN ORDINANCE TO ADD CHAPTER 6.40 TO THE MILLBRAE MUNICIPAL CODE PROHIBITING THE USE OF POLYSTYRENE FOAM AND SOLID DISPOSABLE FOOD SERVICE WARE AND REQUIRING THE USE OF BIODEGRADABLE, COMPOSTABLE, REUSABLE OR RECYCLABLE FOOD SERVICE WARE BY FOOD VENDORS IN THE CITY**

**WHEREAS**, the City has a duty to protect the natural environment, the economy, and the health of its citizens; and

**WHEREAS**, effective ways to reduce the negative environmental impacts of disposable food service ware include reusing or recycling food service ware and using biodegradable or compostable take-out materials made from renewable resources such as paper, corn starch, potato starch, and sugarcane; and

**WHEREAS**, polystyrene is a common environmental pollutant as well as a non-biodegradable, non-compostable, non-recyclable or non-reusable substance used as food service ware by food vendors operating in the City; and

**WHEREAS**, there continues to be no substantial recycling of polystyrene food service ware; and

**WHEREAS**, affordable compostable food service ware products are increasingly becoming available for most food service applications such as cups, plates, and hinged containers and these products are more ecologically sound than polystyrene materials and can be turned into a compost product; and

**WHEREAS**, residents can get discounted composting bins from the County of San Mateo RecycleWorks Program, which can be used to compost food scraps and biodegradable, compostable, or food soiled paper take out food service ware; and

**WHEREAS**, natural compost products are used as a very effective soil amendment for farms and gardens that conserves water, prevents erosion and adds to soil "tilth" to reduce the need for applications of fertilizers, herbicides and pesticides, thereby moving towards a healthier zero waste system; and

**WHEREAS**, disposable food service ware constitutes a portion of the litter in Millbrae's streets, parks and public places which increases City costs; and

**WHEREAS**, polystyrene foam is a common pollutant that fragments into smaller, non-biodegradable pieces that are ingested by marine life and other wildlife thus harming or killing them; and

**WHEREAS**, due to the physical properties of polystyrene, the EPA states “that such materials can also have serious impacts on human health, wildlife, the aquatic environment and the economy”; and

**WHEREAS**, in the manufacturing process as well as the use and disposal of products, the energy consumption, greenhouse gas effect, and other environmental effects, polystyrene’s environmental impacts are rated second highest, according to the California Integrated Waste Management Board; and

**WHEREAS**, styrene, a component of polystyrene, is a known hazardous substance that medical evidence and the Food and Drug Administration suggests leaches from polystyrene containers into food and drink and is a suspected carcinogen and neurotoxin which potentially threatens human health and the general public is not typically warned of such potential hazards; and

**WHEREAS**, due to these concerns, cities began banning polystyrene foam food service ware including several California cities such as Berkeley (1990), Oakland (2007), and San Francisco (2007) where local businesses and several national corporations have successfully replaced it and other non-biodegradable food service ware with affordable, safe, biodegradable products; and

**WHEREAS**, restricting the use of polystyrene foam and solid disposable food service ware products and replacing non-biodegradable, non-compostable, non-reusable, or non-recyclable food service ware with biodegradable, compostable, reusable, or recyclable food service ware products in Millbrae will further protect the public health and safety of the residents of Millbrae, the natural environment, waterways and wildlife and would advance the City’s goal of developing a sustainable City, and

**WHEREAS**, in light of the foregoing, the City Council desires to institute two specific practices by all food vendors in Millbrae and to regulate said practices in City facilities. The first is that the use of Foam Polystyrene or Solid Polystyrene disposable food service ware will be prohibited. The second is that all disposable food service ware will be required to be biodegradable, compostable, reusable, or recyclable unless there is no available biodegradable, compostable, reusable, or recyclable alternative for a specific application.

**THE CITY COUNCIL OF THE CITY OF MILLBRAE HEREBY DOES ORDAIN AS FOLLOWS:**

**SECTION 1. ADDITION OF CHAPTER 6.40.**

Chapter 6.40 hereby is added to the Millbrae Municipal Code to read as follows:

**Chapter 6.40**

**SUSTAINABLE FOOD SERVICE WARE ORDINANCE**

**Sections:**

- 6.40.010 Definitions**
- 6.40.020 Prohibited Use of Disposable Food Service Ware**
- 6.40.030 Required Use of Biodegradable, Compostable, Reusable or Recyclable Food Service Ware**
- 6.40.040 Exemptions**
- 6.40.050 Regulations; Enforcement**
- 6.40.060 Violations and Penalties**

**6.40.010 Definitions**

“ASTM Standard” means meeting the standards of the American Society for Testing and Materials (ASTM) International Standards D6400 or D6868 for biodegradable and compostable plastics, as those standards may be amended. D6400 is the specification for plastics designed for compostability in municipal or industrial aerobic composting facilities. D6868 is the specification for aerobic compostability of plastics used as coatings on a compostable substrate.

“Biodegradable” means the entire product or package will completely degrade and return to nature, i.e., decompose into elements found in nature within a reasonably short period of time after customary disposal.

“City Facilities” means any building, structure or vehicles owned or operated by the City of Millbrae, its agent, agencies and departments.

“Compostable” means all materials in the product or package will degrade into, or otherwise become part of, usable compost (e.g., soil-conditioning material, mulch) in a safe and timely manner. Compostable disposable food service ware must meet ASTM-Standards for compostability and any bio-plastic or plastic-like product must be clearly labeled, preferably with a color symbol, such that any customer or processor can easily distinguish the ASTM Standard compostable plastic from non-ASTM Specification compostable plastic.

“Customer” means any person obtaining prepared food from a food vendor.

“Disposable Food Service Ware” means all containers, bowls, plates, trays, cartons, cups, lids, straws, forks, spoons, knives, and other items designed for one-time or non-durable uses on or in which any food vendor directly places or packages prepared foods or which are used to consume foods. This includes, but is not limited to, service ware for takeout foods and/or leftovers from partially consumed meals prepared at food vendors.

“Food Vendor” means any and all sales outlets, stores, shops, vehicles or other places of business located within the City of Millbrae which operate primarily to sell or convey foods or beverages directly to the ultimate consumer, which foods or beverages are predominantly contained, wrapped or held in or on packaging, including both restaurants and retail food vendors. “Restaurant” means any establishment located within the City of Millbrae that sells prepared food for consumption on, near, or off its premises by customers. For the purposes of this chapter the term includes a restaurant operating from a temporary facility, cart, vehicle or mobile unit. “Retail Food Vendor” means any place, other than a restaurant, located within the City of Millbrae where food is prepared, mixed, cooked, baked, smoked, preserved, bottled, packaged, handled, stored, manufactured and sold or offered for sale, including, but not limited to, drive-in, coffee shop, cafeteria, short-order cafe, delicatessen, luncheonette, grill, sandwich shop, soda fountain, bed and breakfast inn, tavern, bar, cocktail lounge, nightclub, roadside stand, take-out prepared food place, industrial feeding establishment, catering kitchen, mobile food preparation unit, commissary, grocery store, public food market, produce stand, food stand, venue, special event, or similar place in which food or drink is prepared for sale or for service on the premises or elsewhere, and any other establishment or operation where food is processed, prepared, stored, served or provided for the public for charge.

“Polystyrene” means and includes blown polystyrene and expanded and extruded foams (sometimes called “Styrofoam<sup>®</sup>,” a Dow Chemical Co. trademarked form of EPS insulation) also referred to as expanded polystyrene (EPS) which are thermoplastic petrochemical materials utilizing a styrene monomer and processed by any number of techniques including, but not limited to, fusion of polymer spheres (expandable bead polystyrene), injection molding, form molding, and extrusion-blow molding (extruded foam polystyrene), and in this chapter is referenced as “Foam Polystyrene.” Foam Polystyrene is generally used to make cups, bowls, plates, trays, clamshell containers, meat trays and egg cartons. The term “polystyrene” also means and includes clear or solid polystyrene which is also known as “oriented,” and referenced in this chapter as “Solid Polystyrene.” “Solid Polystyrene” is generally used to make clear clamshell containers, and clear or colored straws, lids and utensils.

“Prepared Food” means food or beverages, which are served, packaged, cooked, chopped, sliced, mixed, brewed, frozen, squeezed or otherwise prepared on the food vendor’s premises within the City of Millbrae. Prepared food may be eaten either on or off the premises, also known as “takeout food.”

“Recyclable” means material that can be sorted, cleansed, and reconstituted using Millbrae’s available recycling collection programs for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating, converting, or otherwise thermally destroying solid waste.

“Reusable” means all materials in the product or package will be used more than once in its same form by the customer, food vendor or other reuse programs. Reusable food service ware includes: food or beverage containers, packages or trays, such as, but not limited to, soft drink bottles and milk containers that are designed to be returned to the distributor and customer that is provided take-out containers. Reusable also includes durable containers, packages or trays used on-premises or returnable containers brought back to the food vendor.

#### **6.40.020 Prohibited Use of Disposable Food Service Ware**

- A. Food vendors are prohibited from providing prepared food to customers in Foam Polystyrene or Solid Polystyrene disposable food service ware.
- B. No Foam Polystyrene or Solid Polystyrene disposable food service ware shall be used in any City Facilities. No city department or agency will purchase or acquire Foam Polystyrene or Solid Polystyrene disposable food service ware for use at City Facilities.
- C. All individuals, entities or organizations using City Facilities for public or private events shall comply with the requirements in this chapter.

#### **6.40.030 Required Use of Biodegradable, Compostable, Reusable or Recyclable Food Service Ware**

- A. All food vendors using any disposable food service ware will use biodegradable, compostable, reusable or recyclable food service ware. All food vendors are strongly encouraged to use reusable food service ware in place of using disposable food service ware for all food served on-premises. A food vendor may price its products or services to customers in a manner to cover any cost differential.
- B. All individuals, entities or organizations that rent or use City Facilities will use biodegradable, compostable, reusable or recyclable food service ware.

#### **6.40.040 Exemptions**

- A. Foods prepared or packaged outside the City of Millbrae are exempt from the provisions of this chapter. Purveyors of food prepared or packaged outside the City of Millbrae are encouraged to follow the provisions of this chapter.
- B. Food vendors will be exempted from the provisions of this chapter for specific items or types of disposable food service ware if the City Manager or his/her designee finds that a suitable biodegradable, compostable, reusable or recyclable alternative does not exist for a specific application and/or that imposing the requirements of this chapter on that item or type of disposable food service ware would cause undue hardship. Any person may seek an exemption from the requirements of this chapter by filing a request in writing with the City Manager. The City Manager may waive any specific requirement of this chapter for a period of not more than one year if the person seeking the exemption has demonstrated that strict application of the specific requirement would cause undue hardship. A person granted an exemption must re-apply prior to the end of the one year exemption period and demonstrate continued undue hardship if the person wishes to have the exemption extended. The City Manager's decision to grant or deny an exemption or to grant or deny an extension of a previously issued exemption shall be in writing and shall be final.
- C. Coolers and ice chests that are intended for reuse are exempt from the provisions of this chapter.

### **6.40.050 Regulations; Enforcement**

A. The City Manager or his/her designee will have primary responsibility for enforcement of this chapter. The City Manager or his/her designee is authorized to promulgate regulations and to take any and all other actions reasonable and necessary to enforce this chapter, including, but not limited to, entering the premises of any food vendor to verify compliance in accordance with applicable law.

B. Anyone violating or failing to comply with any of the requirements of this chapter will be guilty of an infraction pursuant to Chapter 1.05 of the Municipal Code.

C. The City Attorney may seek legal, injunctive, or other equitable relief to enforce this chapter.

### **6.40.060 Violations and Penalties**

A. If the City Manager or his/her designee determines that a violation of this chapter occurred, he/she will issue a written warning notice to the food vendor that a violation has occurred.

B. If the food vendor engages in subsequent violations of this chapter, the penalties set forth in Section 1.05.010 of this Municipal Code will apply.

C. Food vendors may request an administrative hearing to adjudicate any penalties issued under this chapter by filing a written request with the City Manager or his/her designee. The hearing procedures set forth in Section 1.05.030 shall be followed. Any determination from the administrative hearing on penalties issued under this chapter will be final and conclusive.

## **SECTION 2. AMENDMENT OF SECTION 1.05.020**

Section 1.05.020 of the Millbrae Municipal Code hereby is amended as follows:

Under Item 1, "Community Development," add Chapter 6.40 as an authorized chapter for the Code Enforcement Officer/Community Preservation Specialist.

Under Item 5, "Public Works," add Chapter 6.40 as an authorized chapter for the following positions: Director of Public Works and Industrial Waste Inspector.

## **SECTION 3. CEQA DETERMINATION**

Pursuant to Title 14 of the California Administrative Code, the City Council finds that this Ordinance is exempt from the requirements of the California Environmental Quality Act (CEQA) for the following reasons: (1) under Section 15061(b)(3), it is not a project which has the potential for causing a significant effect on the environment; (2) under Section 15308, it is an authorized action by an agency with regulatory authority for the purpose of assuring the maintenance, restoration, enhancement, or protection of the environment; (3) under Section 15378(a), it is not a project which has a potential for resulting in either a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment; and (4) under Section 15378(b)(3), it is an action that consists of continuing administrative or maintenance activities in the form of general policy and procedure making.

**SECTION 4. EFFECTIVE DATE**

This chapter will become effective on January 1<sup>st</sup>, 2008.

**SECTION 5. SEVERABILITY**

If any section, subsection, sentence, clause, or phrase of this Ordinance is for any reason held to be invalid or unconstitutional by a decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance. The City Council hereby declares that it would have passed this Ordinance and each and every section, subsection, sentence, clause, or phrase not declared invalid or unconstitutional without regard to whether any portion of the Ordinance would be subsequently declared invalid or unconstitutional.

**SECTION 6. PUBLICATION**

Within five (5) days of the enactment of this Ordinance and fifteen (15) days following its enactment, the City Clerk shall publish a summary of this Ordinance prepared by the City Attorney.

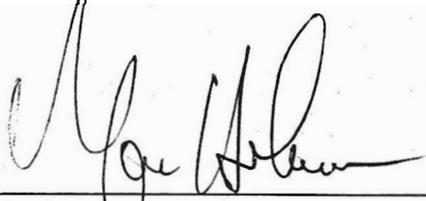
**INTRODUCED** at a regular meeting of the City Council of the City of Millbrae held on September 25, 2007.

**PASSED AND ADOPTED** at a regular meeting of the City Council of the City of Millbrae held on October 9, 2007 by the following roll call vote:

AYES: Hershman, Holober, Larson, Papan, and Gottschalk

NOES: None

ABSENT: None

  
\_\_\_\_\_  
MAYOR

ATTEST:

  
\_\_\_\_\_  
CITY CLERK



## What is wrong with polystyrene food service ware?

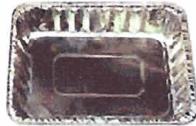
- It is not recyclable.
- It is a common item that is littered on streets that ends up in storm drains, on beaches, and in the Bay and Ocean.
- It breaks down into smaller pieces that may be ingested by wildlife resulting in reduced appetite, reduced nutrient absorption, and starvation.
- It contains hazardous chemicals that may leach from polystyrene containers into food and drink and may cause cancer.



## What does the Ordinance require?

The use of biodegradable, compostable, reusable, or recyclable food service ware.

- Acceptable Products: Aluminum, plastics (no black) coded with , ,  or , uncoated or coated paper, cardboard, and plastics made from corn, potatoes, sugar, or other plant based products.
- Please see the separate list of Sustainable Food Service Ware for more details.
- Some examples of acceptable products are shown below:



## What are the penalties for non-compliance?

Violations may result in fines according to the Municipal Code:

- 1st = warning, 2nd = \$100, 3rd = \$200, 4th = \$500.
- Enforcement is by the City of Millbrae, not the County Health Inspector.

## What can my business do to reduce food service ware costs?

- Allow and encourage customers to bring their own mugs to buy drinks.
- Charge a "take out fee" to cover the cost difference.
- Use reusable dishes and cups instead of disposable ones for "eat-in" customers.

## More questions?

**Call the Recycling & Waste Prevention Program at 259.2345**

**[www.ci.millbrae.ca.us](http://www.ci.millbrae.ca.us)**





**Bay Area Hazardous Waste Management Facility Allocation Committee**

Administered by:  
**Association of Bay Area Governments**

101 Eighth Street, Oakland, CA 94607-4756  
<http://www.abag.ca.gov/hazwaste>

P. O. Box 2050, Oakland, CA 94604-2050  
510/464-7961

Date: November 24, 2009

To: Hazardous Waste Management Facility Allocation Committee

From: Ceil Scandone, Senior Regional Planner

Re: Extended Producer Responsibility: Legislative Preview

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**Executive Summary**

There is mounting evidence of the need for, and great value in establishing Extended Producer Responsibility (EPR or Product Stewardship) rules for a range of products. The attached white paper authored by Rob D’Arcy, Hazardous Waste Management Committee Alternate, lays out the financial, environmental and other challenges local governments face, as both the volume and toxicity of discarded products grows.

In addition to relieving local government of the financial and other burdens of managing the growing number of products deemed hazardous or toxic by shifting that responsibility to the producers, EPR may have other benefits. The attached paper published by the Product Policy Institute (<http://www.productpolicy.org/>) discusses EPR’s potential value in helping to reduce greenhouse gas emissions and combat climate change.

A number of EPR bills introduced in 2009, including AB 283, which would establish a comprehensive EPR framework, became 2-year bills and are on the agenda for 2010. Rob D’Arcy will provide overviews of those bills. Rob is the Chair of the California Product Stewardship Council, an organization of local government agencies formed to vigorously pursue producer responsibility legislation.

**Action Possible:** The Committee may make recommendations on bills to ABAG’s Legislation and Governmental Organizations Committee and/or give staff direction on activities to pursue.

**Discussion**

For the last several years the Committee has been concerned about the growing volume of hazardous and toxic consumer products, such as computers, batteries, fluorescent tubes, and paints that foul the environment, overwhelm household hazardous waste programs, and strain local budgets. The Committee has monitored EPR and other relevant legislation as a means of addressing these burdens. Staff have forwarded recommended positions to ABAG’s Legislative & Governmental Organizations (L & GO) Committee for review and action. This year we will continue that practice.

At its November 19th meeting, the L & GO Committee enthusiastically agreed to put EPR on its list of legislative priorities for the 2010 session. The ABAG Executive Board subsequently approved L & GO’s recommendation that ABAG aggressively pursue

legislation addressing EPR, and hazardous waste issues. Committee staff will work with L & GO staff to ensure the Committee has the most current information. Fortunately, Hazardous Waste Committee members Mark Luce, Mark Green, and Barbara Kondylis also serve on L & GO, and can ensure that EPR remains a legislative priority.

During 2009, several Product Stewardship bills were introduced. Four became two-year bills and will be taken up again in the 2010 session. One of the four, AB 283, would establish a comprehensive Extended Producer Responsibility Framework and address a wide range of products. The others address specific products, including architectural paints, pharmaceuticals and sharps, and motor vehicle brake pads. The brief summaries of the four bills listed below were copied from the California Product Stewardship Council website at [http://www.calpsc.org/policies/state/2010\\_legislation.html](http://www.calpsc.org/policies/state/2010_legislation.html). A Fact Sheet for AB 283 is included in the packet.

- [AB 283, Chesbro](#) – **California Product Stewardship Act: SUPPORT**

This bill would create the California Product Stewardship Act and require the California Integrated Waste Management Board (CIWMB) to administer the program. The bill puts into law the EPR Framework adopted by the CIWMB in January 2008 which was strongly supported by CPSC.

- [AB 1343, Huffman](#) – **Architectural Paint Recycling: SUPPORT**

CPSC worked closely with the authors office, the National Paint and Coatings Association, the California Retailers Association, and Californian's Against Waste to incorporate amendments submitted in January by CPSC to ensure this is a strong EPR bill that will provide a paint stewardship program that aligns closely with the EPR policy framework adopted by CIWMB.

- [SB 26, Simitian](#) – **Home-Generated Pharmaceutical and Sharps Waste: SUPPORT**

California's Senate Bill 26 was suspended in committee so that it may not be amended, passed, or killed this year. The earliest the Legislature may choose to act upon the bill is at the beginning of 2010. Meanwhile, the [criteria and procedures the CIWMB developed with stakeholders input](#) is the leading officially-sanctioned guidance for pharmaceutical collection in California.

- [SB 346, Kehoe](#) – **Brake Pad Partnership Legislation: SUPPORT**

This bill would require the Department of Toxic Substances Control to conduct a baseline survey to determine the concentration levels of nickel, zinc, and antimony in motor vehicle brake friction materials, to monitor concentration levels, allows the Department to establish maximum concentration levels and phases out the sale of certain friction materials and restricts the use of copper. The bill would also create a funding source for compliance through the administration of a fee on the sale of brake pads.



**Attachments:**

Fact Sheet for AB 283

The Road to Product Stewardship: Local Government as Catalysts  
Products, Packaging and US Greenhouse Gas Emissions

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## FACT SHEET FOR AB 283 - California Product Stewardship Act

### SUMMARY

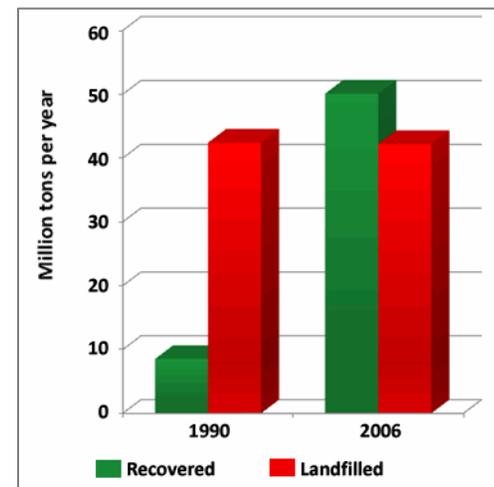
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AB 283 proposes a comprehensive **Extended Producer Responsibility (EPR) Framework** which would establish one law to address a wide range of products that end up in California landfills and have a significant impact on our environment and on local governments, which must manage waste.

California passed AB 939 in 1989, which established a waste management hierarchy that places waste reduction first. However, since that time, waste generation in California during good economic times has continued to climb. Local governments are mandated to solve this problem, but currently the “solutions” are at the back-end - disposal, rather than at the front end – product design and source reduction. The manufacturers of the products continue to have no responsibility for the end-of-life (EOL) management of the products they create and local governments remain powerless to affect design and waste reduction. The chart below demonstrates that even with great achievements in new recycling programs, it is not enough to reduce waste.

An EPR Framework provides producers the flexibility to customize individual product stewardship plans and implement the most cost-effective and business friendly approach for any particular product or product category. Furthermore, it encourages green design and reductions in disposal, toxic releases, and emissions of climate change gases in order to protect human health and our environment.

AB 283 will finally codify a shared responsibility approach and authorize industry to develop cooperative stewardship plans for the management of problem products. These plans would be submitted to the California Integrated Waste Management Board for review and to check for completeness of content, but the producers, *not* government, would design the collection system.



EPR is proven to create jobs, reduce GHG emissions, and stimulate the economy as documented in the economic study done for British Columbia in January 2009 at [http://www.calpsc.org/policies/docs/2009/2009-01-07\\_BC-Product-Stewardship.pdf](http://www.calpsc.org/policies/docs/2009/2009-01-07_BC-Product-Stewardship.pdf)

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## PROBLEM

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Since California enacted its groundbreaking **recycling legislation** (AB 939, 1989), we have created 22 new programs to regulate the EOL management of products. Rather than implementing separate laws to address environmental concerns for every individual product, AB 283 is a comprehensive **Extended Producer Responsibility (EPR) Framework** which addresses a wide range of products that end up in California landfills and cause significant environmental problems. AB 283 provides a holistic approach to managing product waste but still allows flexibility for individual producers and industries to develop plans based on the uniqueness of each product.

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## BACKGROUND

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The EPR Framework is a strategy to share responsibility among those who make, sell, use, and dispose of products, but places the primary responsibility on producers because they have the greatest ability to reduce their product's lifecycle impacts. In other words, all those who benefit from a product would share in the costs associated with the environmental impacts of the product. By having producers share in the costs of managing product discards, EPR harnesses the power of the free market to drive environmental improvement. EPR is a great economic stimulator as there are more jobs created for recycling than are utilized for landfilling.

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## SUPPORT

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1. Alameda County StopWaste.org
2. American Federation of State, County and Municipal Employees – AFL-CIO
3. Californians Against Waste
4. California Association of Environmental Health Administrators
5. California Conference of Environmental Health Directors
6. California League of Conservation Voters
7. California Resource Recovery Association
8. California Retailers Association (w/concerns)
9. California Product Stewardship Council
10. California Senior Legislature
11. California State Association of Counties
12. Central Contra Costa Sanitary District
13. Central Contra Costa Solid Waste Authority
14. City and County of San Francisco
15. City of Chula Vista
16. City of Cupertino
17. City of Fremont
18. City of Lathrop
19. City of Napa
20. City of Oakland
21. City of Santa Cruz
22. City of Stockton
23. City of Sunnyvale
24. City of Union City
25. City of Torrance
26. Clean Water Action
27. Coastkeeper
28. Contra Costa Clean Water Program
29. County of San Joaquin
30. County of Marin
31. County of Napa
32. County of Santa Barbara
33. County of Santa Clara
34. County of Solano
35. County of Sonoma
36. County of Tuolumne
37. Defenders of Wildlife
38. Del Norte Solid Waste Mgt. Authority
39. Environment California
40. Green Cities California
41. Green Shangha
42. Heal the Bay
43. Humboldt Waste Management Authority
44. League of California Cities
45. Longbeach Organic
46. Marin County Hazardous & Solid Waste Management Joint Powers Authority
47. Marin Sanitary Service
48. Mendocino Solid Waste Management Authority
49. Napa Recycling & Waste Services, LLC.
50. Natural Resources Defense Council

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|--|--|
| 51. Planning and Conservation League         | 64. Surfrider Foundation West LA/Malibu Chapter                                  |
| 52. Product Policy Institute                 | 65. Peninsula Packaging LLC  |
| 53. Product Stewardship Institute            | 66. Tamalpias Community Services District  |
| 54. Regional Council of Rural Counties       | 67. TDC Environmental  |
| 55. Republic Services, Inc.                  | 68. Teleosis Institute   |
| 56. San Diego Coastkeeper                    | 69. Warner Brothers Entertainment  |
| 57. Santa Clara Valley Water District        | 70. 7 <sup>th</sup> Generation Advisors  |
| 58. Santa Cruz County                        | 71. PRO Europe – Packaging Recovery Organization                                 |
| 59. Sierra Club California                   | 72. Austrian Ministry of Agriculture, Forestry, Environment and Water Management |
| 60. Santa Monica Baykeeper                   |  |
| 61. SLV Redemption/Recycling Centers         |  |
| 62. Solid Waste Association of North America |  |
| 63. Sonoma County Waste Management Agency    |  |

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**OPPOSE**

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| 1. Alliance of Automobile Manufacturers                      | 19. Family Winemakers of California                      |
| 2. American Chemistry Council                                | 20. Glass Packaging Institute                            |
| 3. American Forest and Paper Association                     | 21. Grocery Manufacturers Association                    |
| 4. AstraZeneca   | 22. Industry Environmental Association                   |
| 5. BIOCOM  | 23. Information Technology Industry Council              |
| 6. California Chamber of Commerce                            | 24. Lassen Regional Solid Waste Management Authority     |
| 7. California Council for Environmental and Economic Balance | 25. National Paint and Coatings Association              |
| 8. California Film Extruders and Converters Association      | 26. Merck and Co, Inc.                                   |
| 9. California Grocers Association                            | 27. Pactiv Corporation                                   |
| 10. California Grocery Manufacturers Association             | 28. Personal Care Products Council                       |
| 11. California Healthcare Institute                          | 29. Pharmaceutical Research and Manufacturers of America |
| 12. California League of Food Processors                     | 30. Proctor & Gamble                                     |
| 13. California Manufacturers & Technology Association        | 31. Soap and Detergent Association                       |
| 14. California Paint Council                                 | 32. Tech America   |
| 15. Cal-Tax  | 33. TechNet  |
| 16. Chemical Industry Council of California                  | 34. Western Growers                                      |
| 17. Consumer Specialty Products Association                  | 35. Western States Petroleum Association                 |
| 18. Dart Container Corporation                               | 36. Western Wood Preservers Institute                    |

**ASSEMBLY APPROPRIATIONS COMMITTEE 5/28/09**

Bill was held in the suspense file.

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# The Road to Product Stewardship: Local Government as Catalysts

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## EXECUTIVE SUMMARY

### **Product Stewardship: Changing Materials Design and End-of-Life Management**

“Extended Producer Responsibility (EPR), or Product Stewardship, means whoever designs, produces, sells or uses a product takes responsibility for minimizing its environmental impact through all stages of the product’s life cycle. And the producer, having the greatest ability to minimize impacts, has the most responsibility. Product recycling should be an extension of the marketing system, mirroring the production and distribution process in a kind of “reverse retail” process; and it should be managed through commercial arrangements — all as part of excellent customer service”.<sup>1</sup>

### **Broken System Overwhelms Local Government, Endangers Public Welfare**

A century ago, local governments were able to protect human health and natural resources by managing household waste as a public service. The intervening decades brought enormous changes in manufacturers’ ability to synthesize chemicals, produce inexpensive, ‘disposable’ goods, and operate multi-national systems for sourcing, manufacturing, packaging, and transporting products. In the absence of regulations requiring basic stewardship practices on the part of producers, both the volume and toxicity of product waste have increased exponentially, in ways that local governments have no control over.

The State of California has responded to individual product threats to health and safety at end-of-life by banning them from landfills. Local governments have established Household Hazardous Waste (HHW) Programs for residents and small businesses as a safe disposal alternative. HHW Programs statewide have become the default collection mechanism for a growing list of problem products common to households and small businesses. Although HHW programs on average serve less than 7% of the households in any jurisdiction and collect a small fraction of the products they are intended to target, they are costly to operate and stretch local government budgets beyond their limits.

California HHW programs face multiple challenges:

1. Existing collection infrastructure is inadequate to manage the current amount of hazardous products, let alone the vast amount of new Universal Waste banned from the trash.
2. HHW collection services are not perceived as being convenient by residents needing to dispose of commonly used products.
3. California residents are not aware of the landfill ban for Universal Waste in 2006 or the sharps ban of 2008.
4. HHW programs do not have adequate funding to expand the service to collect and process Universal Waste through the HHW collection infrastructure.
5. Even if they were able to collect all the hazardous products in the waste stream, local government HHW programs have no influence or effect on reducing toxicity through better product design.

### **Local Governments as Catalysts for Change**

This fiscal and public welfare crisis demands a long-term solution. An Extended Producer Responsibility approach, as demonstrated in successfully operating programs in Canada, Europe, Japan and South Korea can benefit consumers, manufacturers, and retailers, in addition to local

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<sup>1</sup> California Product Stewardship Council, <http://www.calpsc.org/solution/index.html>, 2009

ratepayers and the governments who serve them. To achieve a change meeting both the public interest and business interests, the State must take the lead in creating a legal framework and producers must come to the table to design implementation systems that work for their product lines. Currently local governments are exploring a variety of strategies to catalyze these key players to meaningfully engage in the process of creating systems appropriate to the communities and markets within the United States.

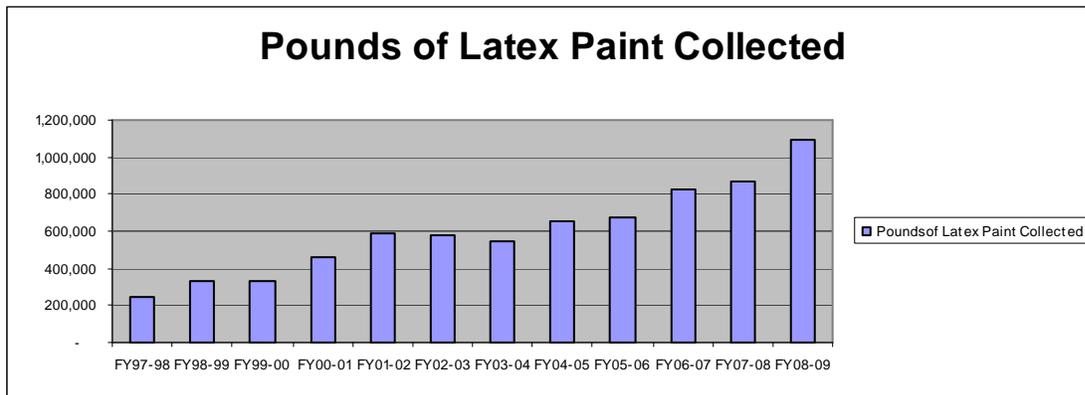
## PROBLEM PRODUCTS

U.S. EPA data establishes that 75% of the municipal waste stream is made up of products and packaging. A significant and growing share of these products contain hazardous constituents, and are banned from the landfill at the end of their useful life. Because the HHW programs around the state are identified as the primary collection mechanism, substantial infrastructure and funding are necessary to collect and manage these wastes. The following description of a few problem waste streams is not inclusive of all products dealt with through local governments programs, but is meant to illustrate the gravity of the current situation facing HHW programs.

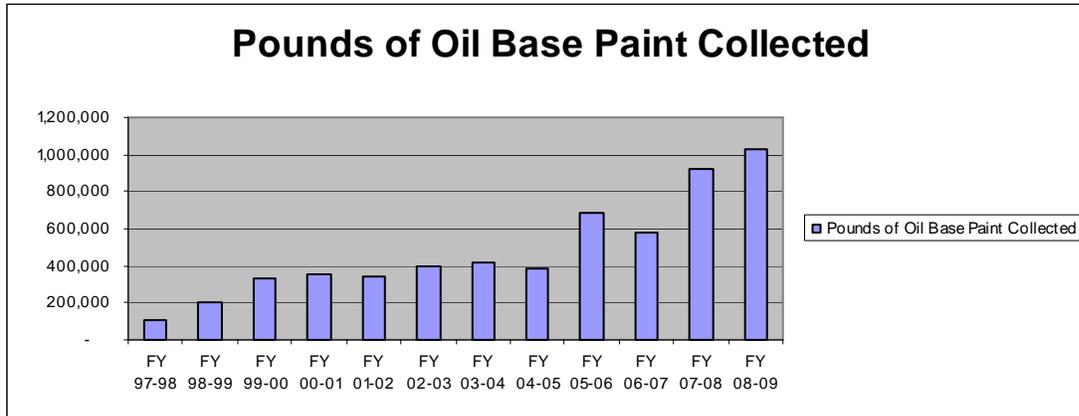
### Paint

Paint, by far, is the largest waste stream collected by local government HHW programs, and is typically the most costly. In Santa Clara County over 2 million pounds of paint are collected annually at a total cost of over \$1,600,000 (about a \$0.80 per pound). Roughly 49% is latex paint and the remainders are other architectural coatings, such as oil paint. As environmental awareness grows, paint volumes turned in for recycling or disposal continue to increase.

**Chart 1**



**Chart 2**



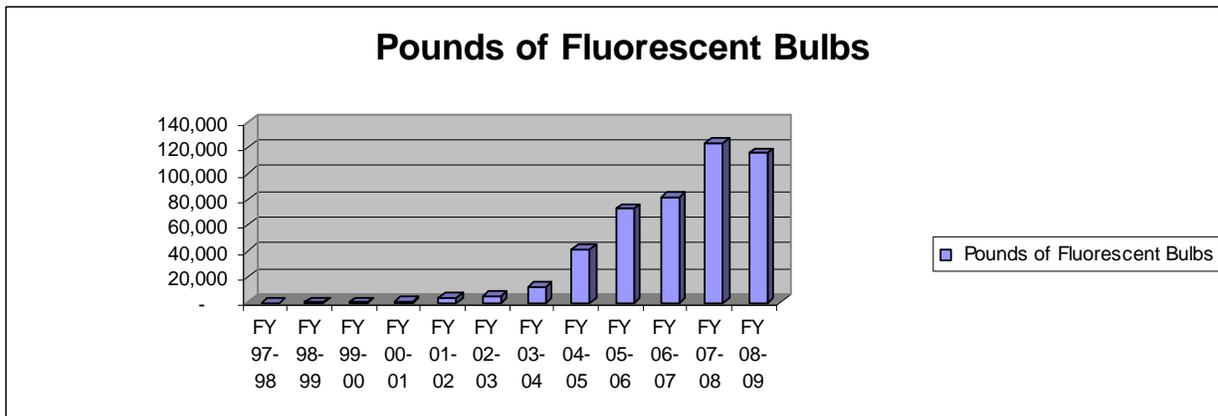
### Universal Waste

On February 9, 2006, common household products that are widely used and containing toxic substances (such as fluorescent lamps, alkaline batteries and a vast array of electronic products) were banned from all landfills in California. Aside from the challenge to local governments of notifying consumers of the new disposal restrictions, the projected volume of these “Universal Wastes” (UW) generated by households and small businesses in California will far exceed the programs’ current physical and financial capability. Costs in Santa Clara County alone could increase from \$4 million to \$8 million per year to comply with the new regulations. Compliance under existing infrastructure and funding cannot be achieved. Moreover, improperly discarded products are increasingly recognized as a threat to human health and wildlife.

### Fluorescent Lighting

Fluorescent lamp collection is one of the fastest growing segments of the HHW waste stream. At the time of the landfill ban in 2006, there were no safe, convenient and free options for residents to dispose of lamps except local government funded HHW programs. In FY 2005, the HHW Program collected and recycled 41,000 pounds of fluorescent lamps. In FY 2008 the Santa Clara County program collected and recycled 123,000 pounds of fluorescent lamps at a cost of over \$300,000.

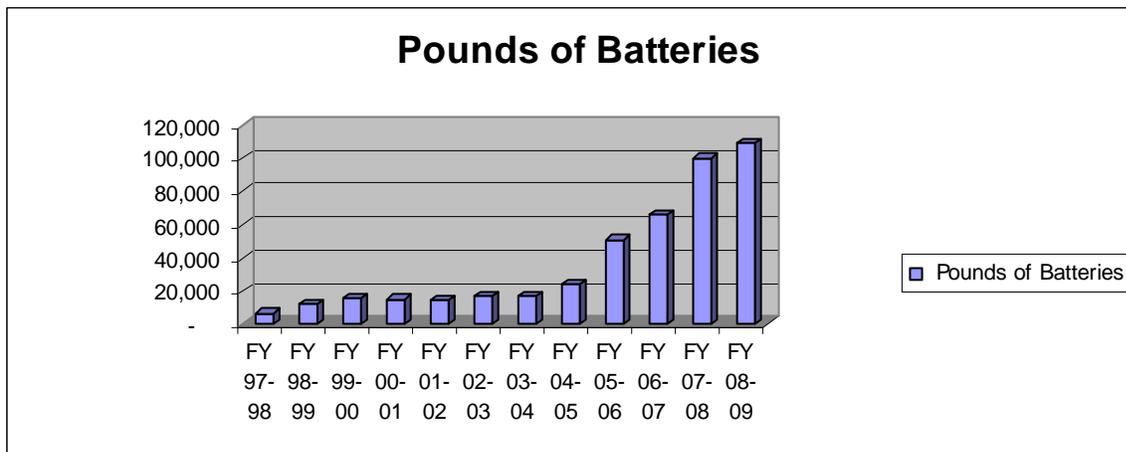
**Chart 3**



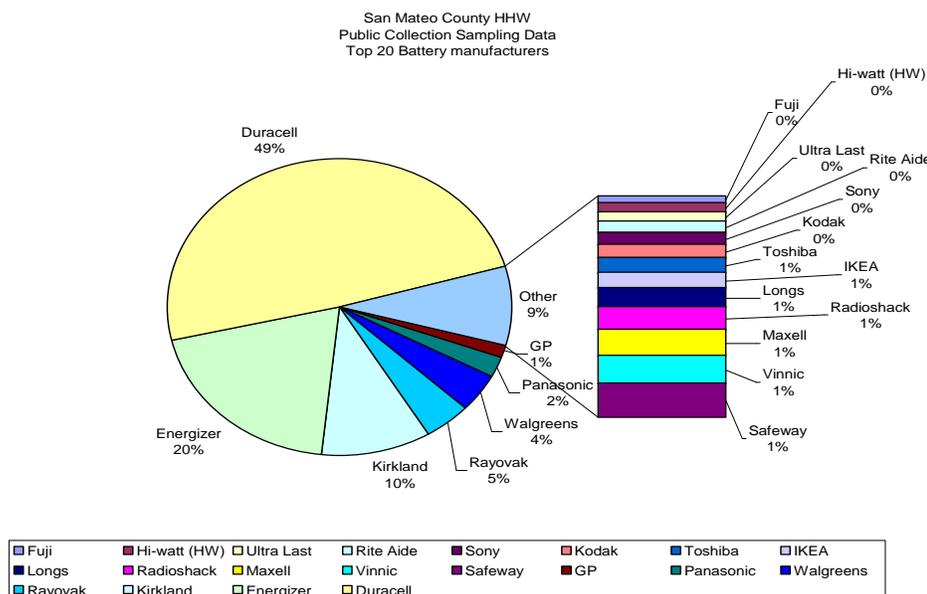
## Household Batteries

A similar rise in the volume of household batteries (AAA, AA, 9-volt, and the like) has occurred. In FY 2005, the HHW Program collected 24,000 pounds of batteries. In FY 2009, over 100,000 pounds of batteries were collected. The recycling cost alone was \$65,000. An additional \$300,000 was spent on public education, collection, sorting and taping. In February 2009, new rules promulgated by the federal DOT to prepare batteries for shipment (taping each battery) raised the spectre of skyrocketing costs. We have studied the labor needed to comply with this new regulation and have calculated that taping 1,100 pounds of batteries required 19 labor hours. Between January and December, 2008, the HHW Program collected over 115,000 pounds of batteries and complying with the DOT regulations takes roughly a minute per pound. This is equivalent to approximately 2,000 labor hours each year (1 FTE). The fully loaded cost of a Hazardous Materials Technician to sort and tape batteries is \$42 per hour. This equates to \$.70 per pound.

Chart 4



San Mateo County conducted an analysis by brand of the batteries collected by their HHW Program in 2008. The manufacturers were easily identified and reflect the typical market share of the waste batteries collected by HHW programs throughout the state.



## **Medical Waste**

Medical devices for home use, pharmaceuticals, and even personal care products raise new issues for end-of-life management. These range from the danger of needle sticks by waste haulers to illegal and unsafe drug use by teens, to the entry of persistent organic pollutants into our water systems. Under their standing mission to protect health and safety, managing these wastes now falls to local governments, in addition to products with traditionally-recognized hazards.

### **Sharps**

On September 1, 2008, California Senate Bill 1305 (Figueroa) took effect, making it illegal to place used home-generated sharps in the trash or recycling receptacles. The new law mandates used sharps be placed in approved sharps containers. Once the container is full, it should be brought to an approved drop-off location. The burden of legal disposal is placed on the consumer, rather than the manufacturer or distributor. In communities across California, options for sharps users range from free collection by health care providers, to drop-off at pharmacies or local government facilities, to costly mail-back programs at consumer expense.

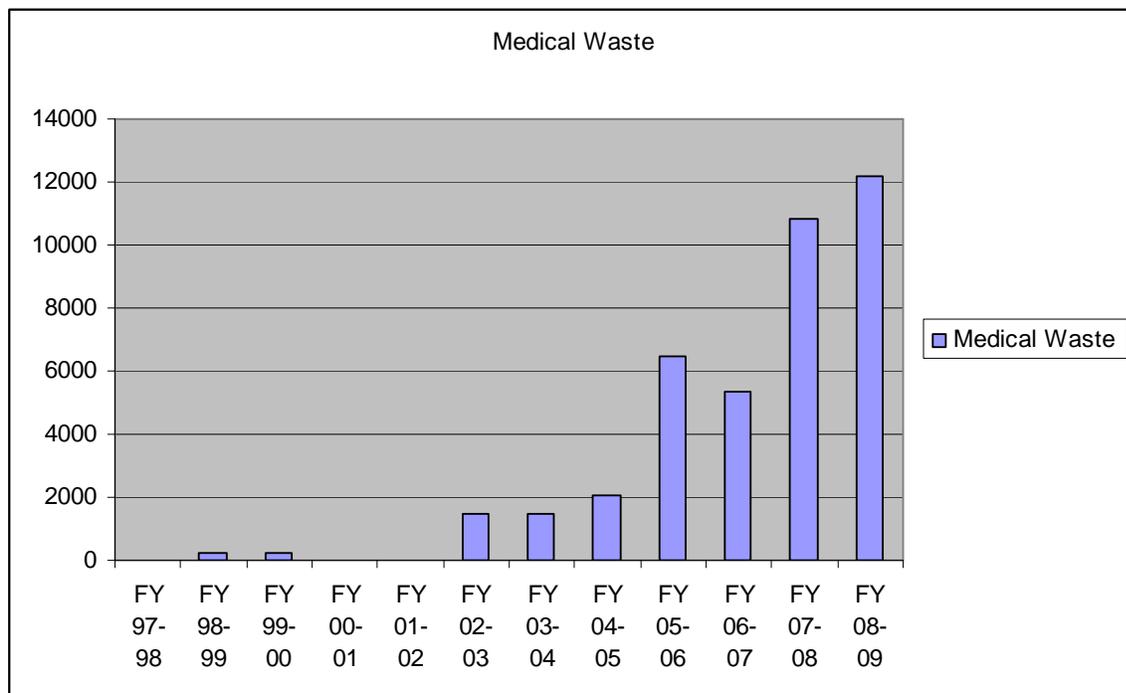
More than three billion sharps are used in the United States each year. It is estimated in Santa Clara County alone, residents generate over 14 million sharps each year. Historically, the Santa Clara County HHW Program collected approximately 2,500 pounds each year which equates to approximately 225,000 (1.5% of sharps generated) sharps. Although the County of Santa Clara's HHW Program has been accepting used home-generated sharps for many years, the Program does not have the resources to provide collection for 1.2 million sharps each month.

### **Pharmaceuticals**

Pharmaceuticals collection and management is complicated by legal and practical issues. HHW staff are not trained in medical waste management; nor can they legally take possession of controlled substances. Controlled substances must be under the control of law enforcement and cannot be accepted by any other party. Additionally, pharmaceuticals come in a variety of solid and liquid forms, in containers normally labeled with sensitive personal information from the consumer. Since no sorting can be done by HHW staff, all containers and their contents are incinerated. In FY 2008, the HHW Program collected over 7,450 pounds of pharmaceuticals at a cost of \$5,500.

In British Columbia, Canada, a medications return program has been in place since 1996. British Columbia, with a population of approximately 4.2 million, has over 900 community pharmacies participating in the program. Pharmacies offer a logical and convenient location for the public to return unused or expired medications. This simple but effective EPR program is funded by the pharmaceutical manufacturers (the same companies that operate in the U.S.) and cost \$315,000 in 2008 (at a fraction of a percent of operating costs, compared to research and development or marketing).

**Chart 5**



### Emerging Waste Streams

#### Solar Panels

According to the Silicon Valley Toxics Coalition, in a January 14, 2009 report entitled *Toward a Just and Sustainable Energy Industry*, solar panels contain many of the same hazardous materials found in electronic waste which is banned from landfill. Metals and chemicals such as lead, brominated flame retardants, cadmium, and chromium are contained in solar panels. Ironically, many of these same materials are being phased out of electronics in compliance with European directives. It is just a matter of time before solar panels are banned from landfill. Santa Clara County's HHW Program has already received solar panels cut up into small pieces and delivered to an HHW collection event. Hundreds of millions of dollars are now being distributed by the federal government, through President Obama's Stimulus Plan to encourage the manufacturing and installation of solar panels throughout the nation. Will we wait until a hazardous product becomes a problem at end of life like we did with electronic waste and fluorescent lighting or will we plan for safe disposal as part of the life cycle of the product?

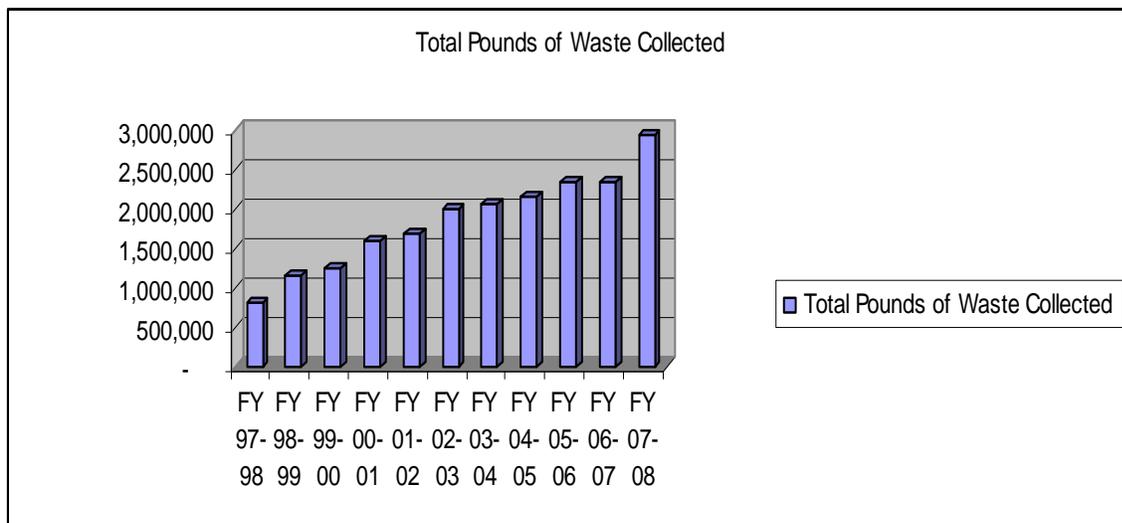
#### Nanotechnology

In an earlier report by the Silicon Valley Toxics Coalition, entitled *Regulating Emerging Technologies in Silicon Valley and beyond*, nanotechnology is explored as a potential problem technology. Nanotechnology is used in the electronics, medicine, environmental remediation and solar energy fields. These processes and materials pose unknown potential environmental and health hazards. As pointed out in the report, nanotechnology presents a particular risk for inhalation because the basis of this technology is the manipulation of material at the molecular level. As with widely used materials of the past, including DDT, asbestos, benzene, and brominated flame retardants more information is needed about this technology and the potential risks to public health.

## BEYOND LOCAL CAPACITIES

As environmental awareness grows and issues such as pharmaceuticals in the water and the ban of many products from landfill become more publicized in the press (the “Al Gore Phenomenon”), the volume of hazardous waste managed by the HHW Program continues to rise. This increased environmental awareness by residents of the County encourages the proper disposal of UW products, like fluorescent lamps and batteries which continue to show the highest disposal growth patterns. Individual product Producer Responsibility laws in California, such as the Mercury Thermostat Collection Act of 2008 (AB 2347), requiring manufacturers to collect and recycle mercury-containing thermostats, provide a small measure of relief. In addition, alternative collection mechanisms such as voluntary Retail Take-it Back Partners are assisting in the collection of UW and sharps and deflecting some costs away from the Santa Clara County HHW Program.

**Chart 6**

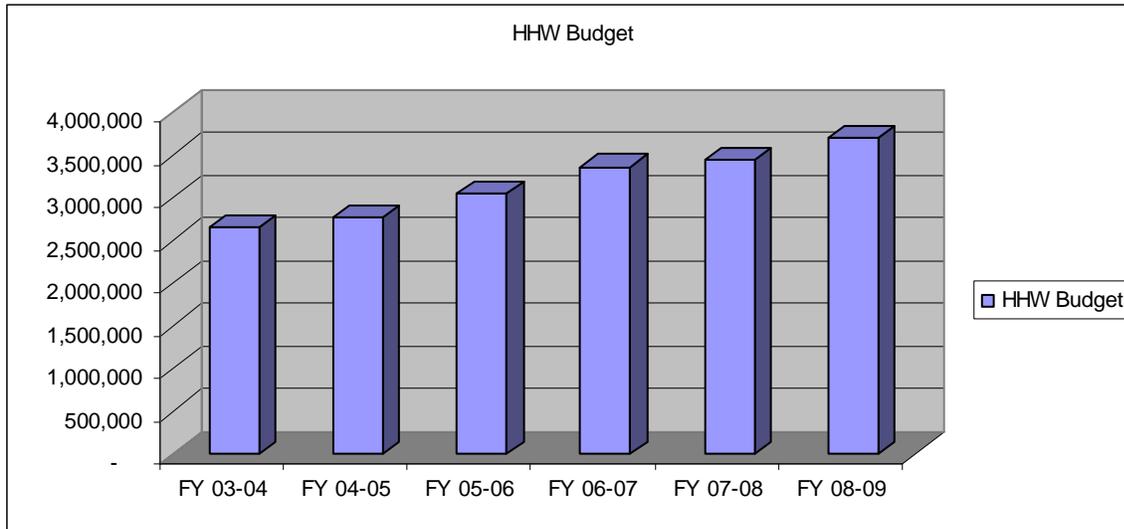


Local government infrastructure, with centralized collection points staffed by government workers and isolated from the places where consumers conduct everyday business (home, work, shopping, recreation), are not designed for the convenience needed for high participation rates. Nor are they large enough to safely store and separate the vast array of products and packaging on the market. The notion that government service can simply be increased, like placing a larger bucket at the end of the same pipe, ignores fundamental differences between government operations and the flexibility and innovation possible in private-sector run systems.

## INCREASED COSTS

As a result of increased hazardous waste volumes, cost to manage the waste has increased as well. Santa Clara County and all of its cities fund the HHW Program through a solid waste tipping fee (AB 939 Implementation Fee) assessed on each ton of residential and commercial waste disposed at landfill. The AB 939 Implementation Fee has increased (see Table 1); but it still does not allow for higher service levels.

**Chart 7**



The AB 939 Implementation Fee displayed below was designed to support resident participation from 3% of households in each jurisdiction. Historically, this level of funding has been inadequate to deliver services to residents demanding service. Each city has had to augment their funding using other funding mechanisms to satisfy their residents. The AB 939 Implementation Fee has been increased to \$2.60 per ton for Fiscal Year 2009/2010 to aid the cities in funding increased demand. Unfortunately, even this increase will not meet demand in most of the cities. As a result, most cities must augment the Fee, with general funds or other sources, to satisfy resident demand. Budget concerns place local governments in the tenuous position of needing to educate the public about proper disposal, but not being able to afford too much success in the form of improved participation.

**Table 1**

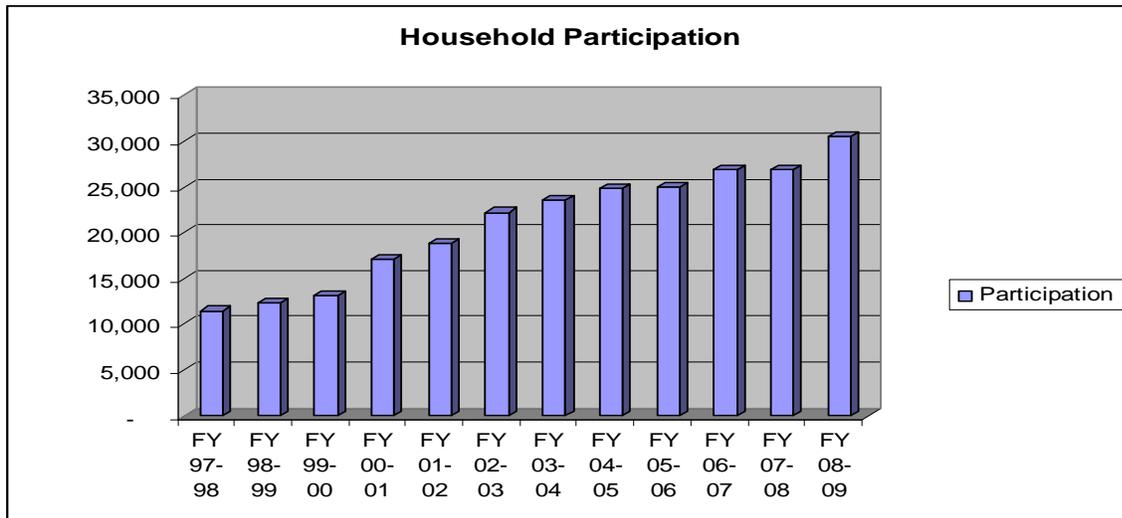
<b>Fiscal Year</b>	<b>AB939 Fee</b>	<b>Augmentation Provided by Cities &amp; County</b>	<b>Non Competitive Grant Fund</b>	<b>Competitive Grant Fund</b>	<b>Total Cost</b>	<b>AB 939 Fee Per Ton</b>
<b>FY 03-04</b>	1,772,480	386,154	389,755	108,470	2,656,860	\$1.85
<b>FY 04-05</b>	1,751,114	409,873	412,441	199,596	2,773,024	\$1.85
<b>FY 05-06</b>	1,883,517	446,744	481,671	230,441	3,042,373	\$1.85
<b>FY 06-07</b>	2,161,138	576,819	488,615	136,857	3,363,430	\$2.22
<b>FY 07-08</b>	2,214,534	641,812	526,757	62,423	3,445,526	\$2.05
<b>FY 08-09</b>	2,219,466	775,692	564,140	140,698	3,699,996	\$2.05

**INCREASING PARTICIPATION**

Since the Program inception in 1992, participation has gradually grown. The marketing of products that contain hazardous components grow faster than local governments ability to

manage them at end of life. The state continues to ban products from landfill, further burdening local government. Below is a chart of participation growth.

**Chart 8**



**LOCAL STAKEHOLDERS: HHW PARTNERS**

HHW Programs are now the default collection mechanism for environmental contaminants identified by many agencies as pollutants of concern (notably, mercury, pesticides, and pharmaceuticals). Water, water treatment, stormwater and solid waste agencies share a common interest in keeping toxics out of the environment. Since they cannot block or treat most chemicals entering the water systems through improper disposal, these agencies promote public use of existing HHW programs

**Waste Water Treatment Plants**

The four publicly owned treatment works (POTW) in Santa Clara County are required to obtain a National Pollutant Discharge Elimination System (NPDES) permit to demonstrate to the Federal government and the State Water Resources Control Board their plans to minimize the discharge of pollutants from sewer systems to water bodies of the State, including the San Francisco and Monterey Bays. The San Jose/Santa Clara, Sunnyvale and Palo Alto POTWs discharge to the San Francisco Bay and the Gilroy POTW discharges to the Monterey Bay.

All POTWs are required to minimize the discharge of pollutants of concern listed on the Federal 303(d) list. The 303(d) list monitors threshold levels of pollutants that may have detrimental effects on water quality and human health. Mercury and pesticides are pollutants of concern listed on the 303(d) list and as a result, all POTWs are required to develop pollution prevention plans to minimize impacts to the Bay. In addition, local POTWs maintain a watch list of potential pollutants not yet listed on the 303(d) list. The current pollutant being considered for the watch list is pharmaceuticals which enters the POTWs through the residential sewer system.

Financing of these programs comes from the respective tributary cities. Individual financing mechanisms vary. For the San Jose/Santa Clara Water Pollution Control Plant (WPCP), the primary source of funding comes from fees paid through tax-based assessments within the residential,

commercial, and industrial sectors. Funding is also generated through monthly user fees, and one-time development fees paid by individuals or organizations needing the WPCP's services.

### **Stormwater Management Agencies**

All cities within the County are required to obtain a NPDES permit to manage stormwater that drains to the Bay, passing untreated from streets, lawns and parking lots through the watershed's creeks. The thirteen cities in the northern part of Santa Clara County and the County, representing the unincorporated areas, are co-permittees to one NPDES permit. The fourteen jurisdictions fund and cooperate through the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPP). The County and the cities of Gilroy and Morgan Hill are co-permittees to a separate permit. Co-permittees are required to develop and implement pollution prevention plans to manage pollutants of concern on the 303(d) list, including litter (products and packaging), mercury, pesticides, and a wide range of common household chemicals.

The US EPA has listed all sections of the San Francisco Bay and Santa Clara County's Guadalupe River Watershed as impaired due to mercury pollution. When mercury is introduced anywhere in the environment, it has the potential to volatilize and be deposited elsewhere. Because of mercury's bioaccumulation and movement patterns in the environment, the reduction of any amount of mercury is important. Recycling and disposal of mercury in consumer products can have a significant impact on reducing mercury levels in the environment.

Stormwater fees are used to improve the quality of a city's storm and surface water runoff and to meet the costs of increasing federal, state, and regional regulatory requirements. These fees support pollution control, system maintenance and operations, storm sewer improvements, and administrative services. Each NPDES co-permittee city finances their portion of the stormwater program differently. For example, in one city the fee appears on each property owner's property tax bill while other cities fund storm water program activities directly from their general fund.

### **Role of HHW Programs**

The Santa Clara County HHW program provides an essential service in support of the POTW's and Stormwater administration of the regions NPDES permits by providing the only legal means of disposal for residents to dispose of household toxics that might otherwise end up dumped into the storm sewer system or down the drain.

POTWs and Stormwater agencies are conducting education campaigns to discourage residents from disposing of mercury containing products, pesticides and pharmaceuticals down the drain, recommending disposal through the local HHW Programs as the preferred alternative. As a result of increased public education and the Al Gore Phenomenon, participation by residents continues to increase at HHW collection facilities, waste volumes continue to grow and costs continue to rise. At this time, no funding from the POTWs or stormwater programs is provided to the HHW program.

## **TRANSITIONING TO EPR**

### **Expand Local Government Collection Infrastructure?**

The least preferable way for local government to deal with the onslaught of hazardous waste products is to build infrastructure and raise rates and taxes. As displayed above, the Santa Clara

County HHW Program is funded by an AB 939 Implementation Fee. The fee is designed to provide a minimum level of service to 4% of households in each jurisdiction. Currently 4.9% of households in the County use the HHW program at a cost of approximately \$3.7 million. If the Countywide program was to actually collect and manage 100% of the banned waste, the Program could cost as much as \$60 million. Clearly this would be an unattainable level of funding in today's economic and political climate and could cost hundreds of millions of dollars statewide.

Even if sufficient funding were available, HHW programs aren't capable of providing the convenience needed for full consumer participation, or the efficiency of a producer's reverse distribution systems.

### **Retail Take-it-Back for Fluorescent Lamps and Batteries:**

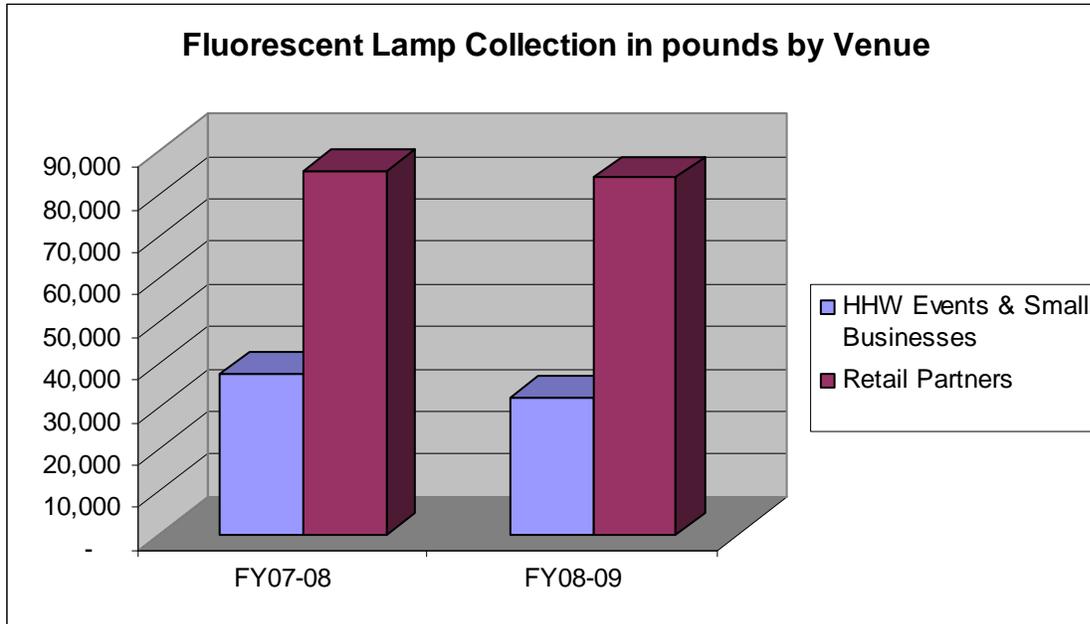
#### **Baby Steps Toward Producer Responsibility**

Since February 2006, Californians are prohibited from placing fluorescent lamps and household batteries in the garbage. To provide Santa Clara County residents with convenient opportunities to properly dispose of these wastes, the Santa Clara County, HHW Program created the Retail-Take-it-Back Partner Program. This program establishes partnerships with local retailers to serve as collection points for used batteries and fluorescents lamps. Retailers work in cooperation with the HHW program by becoming a collection point for residents to drop-off lamps and batteries. The HHW program picks up the waste and transports it to a HHW facility for final shipment to a recycler.

The HHW Program provides Retail Take-it-Back Partners with supplies and materials to collect these wastes from the community and pays for the recycling. The supplies consist of fluorescent lamp recycling boxes and 5 gallon buckets for battery collection. The Program also provides posters for in-store program advertising, and partners are listed on the HHW website ([www.hhw.org](http://www.hhw.org)) and in public education material. Each partner is provided with instructions on cleaning up bulb breakage, a list of guidelines and responsibilities, and general information on UW to assist them in the collection process. In addition, the County ran ads in local newspapers and funded various television spots, thanking these participating retailers and educating residents about safe and proper disposal.

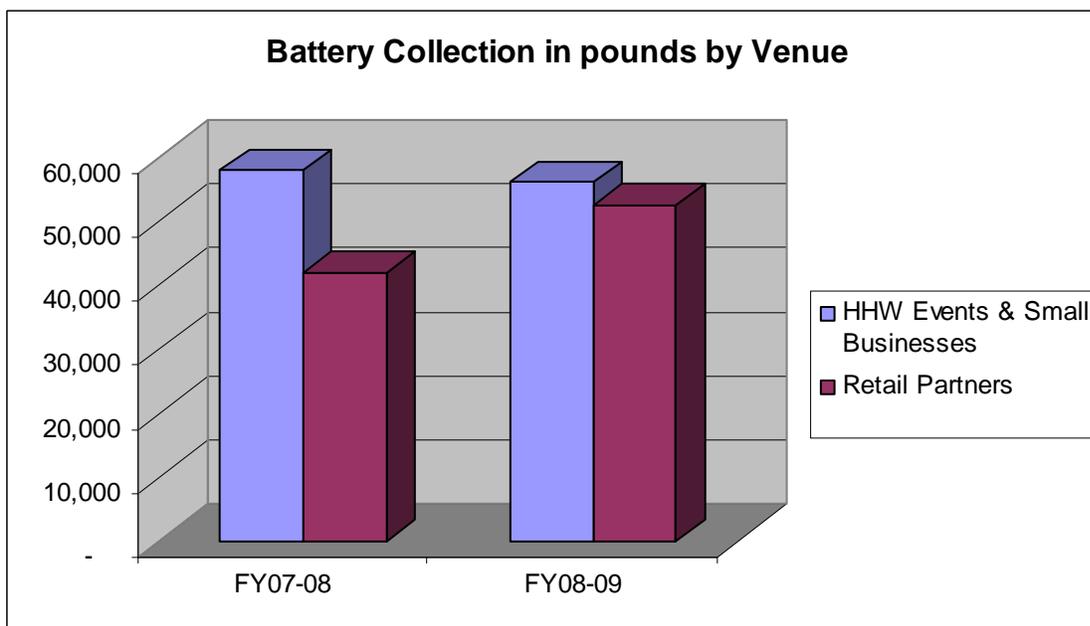
Currently, 66 retailers are participating in the collection of batteries and 32 retailers are collecting fluorescent lamps. Hopefully, in the future, the cost of managing these wastes will be shifted away from local government and taxpayers and placed on the manufacturers where the cost of recycling can be included in the price of the product.

**Chart 9**



As the chart above illustrates, convenience is the key to consumer participation. Since the creation of Retail Take-It-Back Partners, about 70% of fluorescent lamps managed by the County are brought to the retailer. This new convenient drop-off service affords residents simple and easy recycling opportunities. Residents prefer to take their lamps back to the place they bought them.

**Chart 10**



About 50% of the batteries managed by the HHW Program are collected by the Retail Take-it-Back Partners. Even with a small, non-breakable item, residents prefer the convenience of the 'drop-while-you-shop' option.

Due to the high cost and labor required to manage batteries, some local jurisdictions are considering the discontinuance of residential battery collection. While this is an option for local government HHW programs, this kind of a reversal of services could prove politically unpalatable.

### **An Attempted Transition to EPR**

The Santa Clara Clara County HHW Program attempted to shift the financial responsibility of battery and fluorescent recycling to the retailers participating in our program. When Home Depot announced their program to accept compact fluorescent bulbs (operating collection and disposal at their own cost), the County HHW Program saw this as an opportunity to require the same of the other retailers. Almost all retailers threatened to stop accepting bulbs if the County withdrew funding. Only Orchard Supply Hardware agreed to assume the cost for recycling but insisted that their acceptance of bulbs be unpublicized. In the absence of a local ordinance mandating retailer participation we could not withdraw funding. Each retailer remains listed on our website and listed on educational materials.

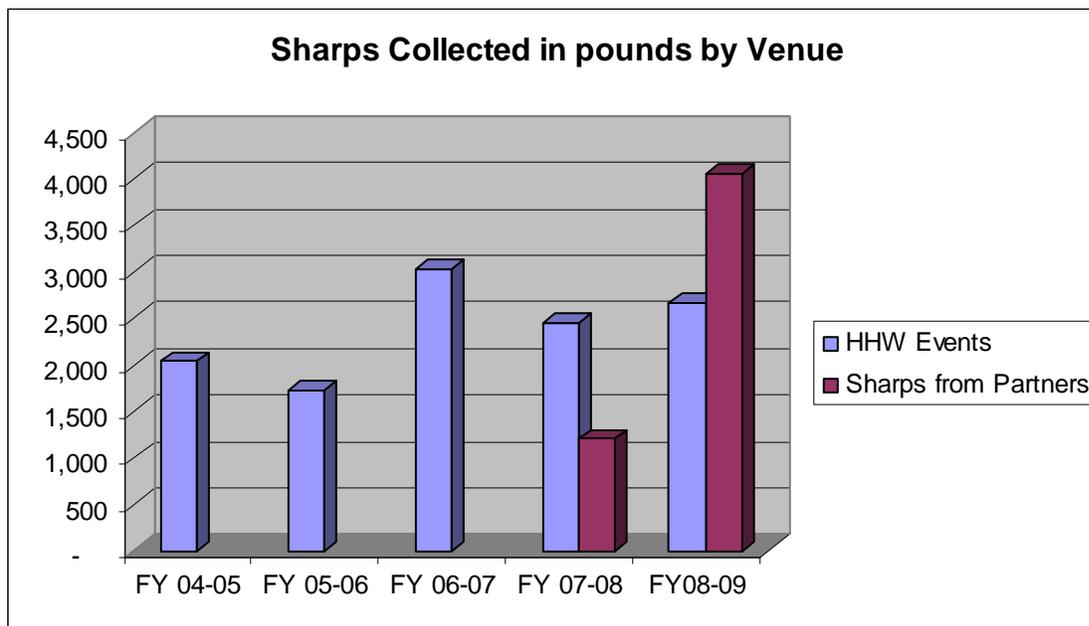
### **Retail Take-it-Back for Sharps at Pharmacies**

Prior to the September, 2008 ban on sharps in the waste stream, the HHW Program recognized the need for more convenient drop-off locations and began recruiting local pharmacies, medical clinics, and veterinarian clinics, to become Retail Take-it-Back Partners for used home-generated sharps. The goals of the Retail-Take-it-Back Program are to encourage proper disposal, develop convenient drop-off locations, and shift the collection and disposal of sharps waste from local government to producers or distributors of the product. Pharmacies may have leverage with producers to create cost-sharing.

In establishing the Retail Take-it-Back Partners, the HHW Program contacted pharmacies, veterinarian clinics, and medical centers, asking if they would partner with the County and become a consolidation point for used-home generated sharps. As incentives to participate, the HHW Program provided partners with a steel receptacle in which residents would directly deposit their used sharps, a limited quantity of quart size biohazard sharps containers for distribution, and advertising opportunities for their business. Partners would be listed on the HHW website and in the drop-off location cards that are placed in our trilingual (English, Spanish, and Vietnamese) sharps brochures. The HHW program also helped with the set up process by providing them with a list of medical waste haulers, a safety guideline for sharps collection, and signage. In addition the County ran ads in local newspapers thanking these participating businesses and educating residents about safe and proper disposal.

Currently 17 pharmacies are participating in the program and provide a valued service to their customers. Each pharmacy recognizes the need for drop-off locations in their community. These Retail-Take-it-Back Partners have made it more convenient for County residents to properly dispose of their used sharps and help reduce the financial burden of managing this waste stream for the County and all cities participating in the HHW Program. The new pharmacy partnerships will double the collection volume for FY 2009.

**Chart 11**



Sharps collection in FY 2008/09 is expected to double and almost all of that increase was collected at our private Retail Take-it-Back Partners. As cited earlier in the British Columbia model, an industry funded and implemented collection program would provide a higher level of convenience to better serve the needs of the community

## **ROLE SHIFTS IN**

### **EXTENDED PRODUCER RESPONSIBILITY (EPR) SYSTEMS**

The Organization for Economic Cooperation and Development defines EPR as an environmental policy approach in which a producer's responsibility, physical and/or financial, for a product is extended to the post-consumer stage of a product's life cycle. There are two key features of EPR policy: (1) the shifting of responsibility (physically and/or economically, fully or partially) upstream to the producer and away from municipalities, and (2) to provide incentives to producers to take environmental considerations into the design of the product.

When the roles of government, producers, retailers, recyclers and reverse distributors, and consumers are properly assigned under an EPR system, both the economy and the environment improve. Existing inefficiencies are removed, and the system financially rewards behavior that conserves resources and prevents pollution.

#### **Wasting Government Resources**

EPR is a paradigm shift in how we think about material flows. Generating "waste" implies a misuse of resources; and local government management of waste squanders taxpayer money. Local governments, historically responsible for protecting public health and managing waste, react to the flow of material at the end of the pipe and have no control or say over the production process to minimize waste. More importantly, local governments are not part of the manufacturing process to reuse these materials. Manufacturers are best suited to reuse these materials in their processes. Local government waste management is inefficient and should be

turned over to manufacturers. This shift in the physical management of materials can lead to more efficient material usage, reduced degradation to the natural world from resource extraction, the creation of green jobs and conservation of energy, particularly fossil fuels. Recycling, reuse, deconstruction, and remanufacturing shift the value added in the economy from highly mechanized, environmentally harmful extraction industries, to labor-intensive, local industries<sup>2</sup>. EPR can also incent better product design for reuse, increased recycled content and design and recyclability.

### **Producers as Designers of Cradle-to-Cradle Systems**

EPR programs can be best understood as a change in the traditional balance of responsibilities between the producers of consumer goods and local governments with regard to waste management. Although they take many forms, these programs are all characterized by the involvement of producers, sometimes through other members of the supply chain (retailers or distributors) in the return and sound management of consumer products at the post-consumer stage. EPR extends the traditional environmental responsibilities that producers have previously been assigned (i.e. worker safety, prevention and treatment of environmental releases from production, and financial and legal responsibility for the sound management of production wastes) to include management of products at the post-consumer stage.

Shifting the financial responsibility can incent manufacturers to reduce the generation of waste and design convenient and efficient system for the collection of waste. Financial responsibility can also drive economically sound recycling systems and reduce the toxicity of products on the market. These efficiencies can only be achieved when the experts of production use the same innovation and ingenuity to recycle materials that they use to produce the product. Local government waste management systems are simply a subsidy to industry. Government's limited resources should instead be invested in what they do best - regulate and oversee the market-based systems to protect the environment and public health.

### **Public Benefits**

A properly designed EPR policy can be a driving force for waste avoidance and associated pollution reduction throughout many sectors of the economy. EPR can improve recycling rates reducing litter, particularly ocean litter as studied by the Ocean Protection Council. Further benefits could include:

- reducing the number of landfills and incinerators and their accompanying environmental impacts;
- reducing the burden on local government for the physical and/or financial requirements of waste collection and management;
- fostering recycling and reuse of products or parts thereof;
- improving the ease and timeliness of disassembling products for recycling or reuse;
- reducing or eliminating potentially hazardous chemicals in products;

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<sup>2</sup> Opportunities to Reduce Greenhouse Gas Emissions Through Materials and Land Management Practices, U.S.EPA Office of Solid Waste and Emergency Response, September 2009

- promoting cleaner production and products;
- promoting more efficient use of natural resources;
- improving relations between communities and firms;
- encouraging more efficient and competitive manufacturing;
- promoting more integrated management of the environment by placing an emphasis on the product's life cycle;
- improving materials management." <sup>3</sup>

## **LOCAL GOVERNMENTS AS CATALYSTS**

Local governments until recently have been quiet in the U.S and California about the deluge of hazardous products they must manage in order to comply with state landfill bans. Historically, they act as agents of higher levels of government, and provide direct services to their resident communities. The growing waste crisis, however, has inspired many to move into the policy-making arena, raising their voices individually and collectively to advocate for meaningful and constructive change.

With a heavy stake in the game, local governments seek a seat at the table while new systems are designed. And they are taking a range of actions to bring producers to the table to cooperate in the creating of a level legal playing field overseen by State and Federal agencies.

### **Strategies for Consideration**

#### **1. Adopt Local Ordinances**

New York City will be a proving ground for a local ordinance mandating take-back by the producers . In this case, the electronic manufacturers (producers) are responsible for the development of a system to take-back their products from the consumer. The new ordinance has been challenged by the Consumers Electronics Association and the Information Technology Industry Council, both electronic manufacturer groups. This case speaks to the heart of EPR and the ability of local governments to regulate the behavior of global producers who may indirectly sell products in the City.

Only one local jurisdiction in California, the San Luis Obispo Integrated Waste Management Authority, has imposed a local ordinance mandating take-back by a retailer who sells a certain product. The local ordinances require that retailers take-back and manage the end of life disposition of sharps, fluorescent lamps, paint and batteries.

Whether local ordinances of these types are upheld by the courts will take some years to resolve at a national level. In both the short and the long run, manufacturer resources are better invested in designing EPR systems appropriate to their specific product lines than in fighting a host of lawsuits in District courts. Should the local governments prevail, producers will also bear the expense of compliance with a patchwork of regulations across their markets.

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<sup>3</sup> Environment Canada, <http://www.ec.gc.ca/epr/en/epr.cfm>

## **2. Collective Jurisdiction Lawsuit**

Collectively, all jurisdictions in California have the option to sue manufacturers doing business in the state for the proliferation of hazardous products in the waste stream. Manufacturers knowingly sell products that at the end of life are hazardous and toxic and banned from landfill. Each jurisdiction, in an effort to protect public health and the environment, spends millions of dollars collecting and disposing of these products. The liability for the pollution resulting from hazardous products may be seen as a strict liability issue for manufacturers.

## **3. Litigate to require State Action**

Each jurisdiction in the state can join together to sue the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) for failure to regulate toxic products through their authority to mandate take-back programs. DTSC has found and banned from landfill many products determined by the state to be toxic at the end of its useful life. DTSC has authority under Health and Safety code Section 25253(b)(7) to require a manufacturer whose product is hazardous at end of life and banned from the landfill to implement a take-back system to collect and dispose of or recycle their products.

Mercury in particular is a neurotoxin and a component of fluorescent lamps. It is also a pollutant identified on the 303(d) list of contaminants. The release and accumulation of mercury is known to endanger public health and welfare. Increased mercury is known to bioaccumulate in fish and warnings to the general public and in particular, pregnant woman and nursing mothers are cautioned at limiting their diet of certain fish. In addition, mercury is a contaminant in drinking water and due to climate change, California's water resources are expected to continue to be strained and the contamination of water resources by mercury threatens an already imperiled resource.

Since 2008, DTSC has had authority to require that manufacturers selling fluorescent lamps in the state implement a system to safely collect fluorescent lamps and manage the mercury. DTSC has the authority to mandate the proper management of fluorescent lighting by manufacturers and has failed to do so. Local jurisdictions could band together to demand action on DTSC's part to protect the environment and public health and reduce the financial burden on local governments who have taken action by collecting and managing hazardous waste through local household hazardous waste programs.

## **4. Environmentally Preferable Purchasing**

Local and state governments are large volume consumers and can use their purchasing power to drive markets toward better design, increased recycled content, reduced packaging and vendor take-back of obsolete and unwanted hazardous products for responsible recycling. Purchasing departments can include Extended Producer Responsibility in the purchasing specifications of a product which can save local government the time it takes to manage the waste at end of life and the money required to dispose of it legally.

A variety of jurisdictions are taking this approach, and learning from one another the most efficient and effective ways to implement new specifications. In some cases, such as the adoption of EPEAT standards for electronics, changes in product design are already being seen.

### ***Hierarchy of Preferred Producer Responsibility Purchasing Strategies<sup>1</sup>***

**Best.** Buy directly from manufacturers (typically the brand owners) who offer collection and recycling systems that they operate or finance. This gives the greatest incentive for producers to redesign their goods for recyclability. Example: Dell offers [Asset Recovery and Recycling Services](#) that include equipment collection, data destruction, and equipments donation and recycling.

**Better.** Buy from vendors who participate in a manufacturer-financed third-party recycling program. Example: the [Rechargeable Battery Recycling Corporation's \(RBRC\) Call2Recycle Program](#).

**Good.** Buy from vendors who collect and recycle products and packaging when new items are delivered or when old items reach the end of their useful life. While sending products back up the supply chain will create an infrastructure for recycling, it may not offer incentives for manufacturers to redesign their products.

\* Product Policy Institute

## **5. Join and Support the California Product Stewardship Council**

The California Product Stewardship Council (CPSC) is the only statewide organization speaking for local government HHW programs. Incorporated in July 2007, CPSC was created by like-minded local government staff, who recognize the current model of waste management as unsustainable. Already a powerful voice educating elected officials, businesses, and the public, dozens of cities and counties, waste haulers, special districts handling solid waste and water services, and even producers participate. Allies include a variety of non-profits with similar interests, retailers, and a few industry groups. Membership provides valuable opportunities for outreach and education assistance, information sharing with local governments throughout the state, and keeping up with the ever-changing legislative arena of EPR.

The mission of CPSC is simple:

***To shift California's product waste management system from one focused on government funded and ratepayer financed waste diversion to one that relies on producer responsibility in order to reduce public costs and drive improvements in product design that promote environmental sustainability.<sup>4</sup>***

On February 28, 2007, the Santa Clara County Recycling and Waste Reduction Commission (RWRC) voted to support the CPSC and forward a recommendation to the Board of Supervisors

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<sup>4</sup> CPSC Mission, <http://www.calpsc.org/index.html>, 2009

to encourage their support. On May 22, 2007, the Board of Supervisors voted to support Extended Producer Responsibility and made it part of the Board's Legislative Policies and Priorities. Since then, the Technical Advisory Committee, staff to the RWRC, assigned Rob D'Arcy to act as liaison for the County to CPSC.

Visit [www.CalPSC.org](http://www.CalPSC.org) or call (916) 480-9010.

### **CONCLUSIONS**

The implementation of EPR can take many forms. As outlined above, EPR can range from partnerships with local retail businesses to engaging manufacturers in the courts. Whatever the route, local government will find itself bigger and more expensive to taxpayers if a shift in responsibility is delayed. Without a change in responsibility, the wrong signals continue to be sent to manufacturers and markets will continue to use up our limited resources. The business community and our political process has come to accept externalities like pollution and hazardous materials as though commerce would cease without it. Externalities are avoidable if the incentives for cleaner production are in the right place. EPR promotes greener design and can help decrease the squandering of natural resources. EPR removes inefficient government involvement from the free market by putting industry in charge of recycling and the reuse of those materials. The absence of EPR forces local governments to raise taxes and rates and build a massive waste management public infrastructure to operate recycling material flow. This control belongs in the private sector and the sooner we shift that responsibility to industry the sooner we can expect smaller government and lower taxes.

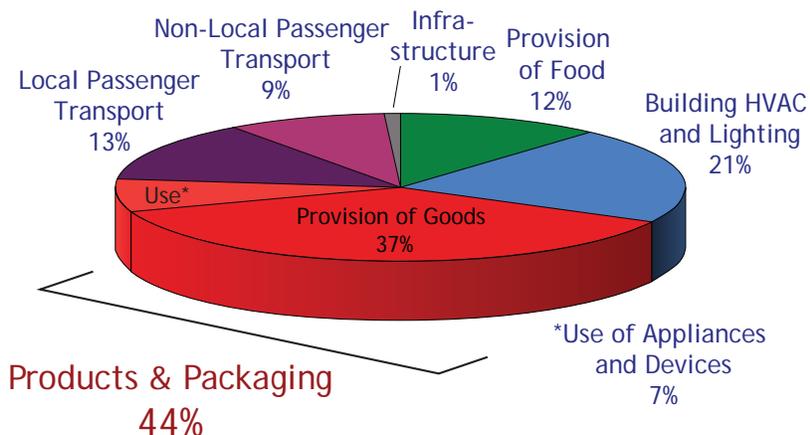
# Products, Packaging and US Greenhouse Gas Emissions

by Joshua Stolaroff - PhD\*

September 2009

## Executive Summary

This paper builds on a new report from the U.S. Environmental Protection Agency, "Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices," which offers new insight into the impact of products and packaging on climate change. Based on the report, non-food products are associated with 37 percent of U.S. greenhouse gas emissions. This paper extends the EPA analysis to include the impacts from producing products abroad that are consumed in the U.S. This brings the share of products and packaging to 44 percent of total U.S. greenhouse gas emissions.



U.S. Greenhouse Gas Emissions: Systems-based view **including emissions embodied in international trade.**

(Provision of Goods: all consumer goods including building components and vehicles.)

A comparison with these national-level figures is made with previous research on U.S. household carbon footprints, which similarly finds that products make up a large share of the average household's greenhouse gas impact and a significantly larger share when international emissions are included. Examples are given of how state and local governments can measure and reduce emissions associated with products. Extended Producer Responsibility is discussed as a policy option to reduce the greenhouse gas impact of products.

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*Disclaimer: This paper has not been reviewed by EPA. The views expressed in this document are solely those of the author and do not necessarily reflect those of the Agency.*



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## **Products and packaging are responsible for a large share of greenhouse gas emissions in the United States.**

Products and packaging are an essential part of daily life for North Americans. Along with food, shelter, and transportation, products are the spoils of an industrial economy that fulfill the needs and wants of modern consumers. However, in its current structure, this economy has many environmental impacts, including a growing and dangerous influence on the Earth's climate.

Transportation, buildings, and, increasingly, food production, are known to contribute to global climate change. But products are an often-overlooked driver of global emissions.

The typical lens through which to view greenhouse gas emissions is through the economic sectors in which they are released. By allocating emissions according to economic sectors, we find the vast majority of greenhouse gas emissions occur in the electric power, transportation, and industrial sectors (34, 28, and 19 percent of emissions, respectively).<sup>1</sup> This view suggests that these three sectors are the most important to control in order to reduce overall emissions and address climate change.

**Considering only emissions that are released within U.S. borders, the total share of U.S. greenhouse gas emissions associated with products and packaging is 37 percent.**

Products do not play an obvious role in this picture. Most products do not emit greenhouse gas directly. The notable exceptions are appliances that run on natural gas and paper products, which emit methane as they decompose in landfills, but neither of these comprises a large share of total greenhouse gas emissions. On the other hand, if we view the impacts of products more completely, across the life cycle of extracting raw materials, processing, manufacturing, transporting, using, and disposing of products, a different picture emerges.

The U.S. EPA recently released a report, “Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices.”<sup>2</sup> Instead of sectors, this report allocates U.S. greenhouse gas emissions to “systems” (see Figure 1). According to the report, “each system represents and comprises multiple parts of the economy that work together to fulfill a particular need.” This systems view is “helpful for framing opportunities to reduce greenhouse gas emissions through prevention-oriented mitigation strategies that act across an entire system.”

What the report calls “prevention-oriented mitigation strategies” include many of the strategies that can reduce the impact of products, like green design, waste prevention, and recycling. EPA's systems view is useful, then, for understanding the impacts of products and means of reducing those impacts.

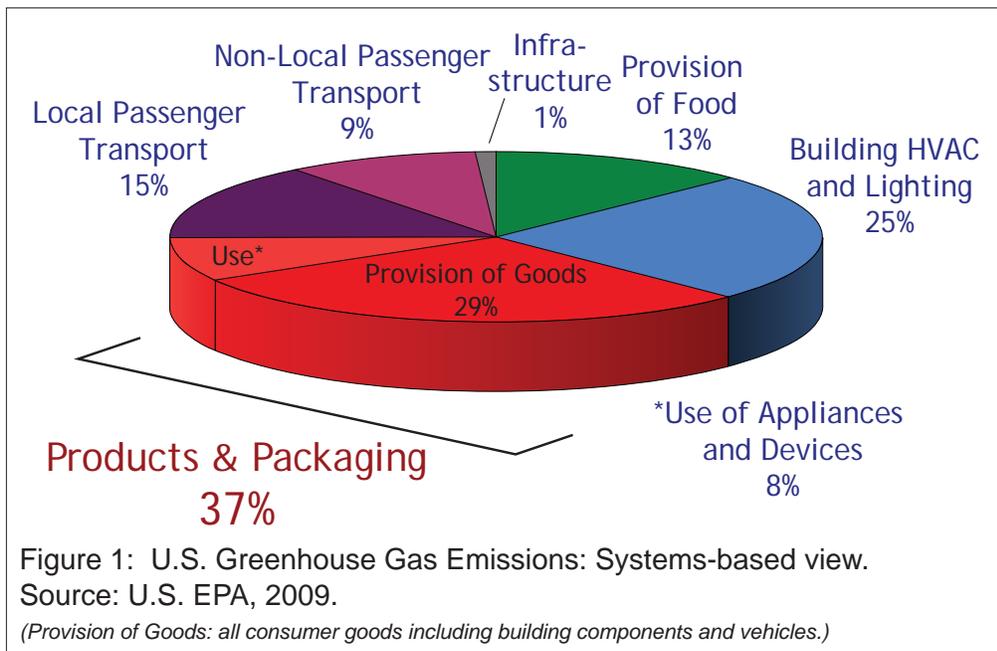


Figure 1: U.S. Greenhouse Gas Emissions: Systems-based view.  
 Source: U.S. EPA, 2009.

The “Provision of Goods” system in Figure 1 is similar to what we consider the impact of products and packaging in the full life cycle sense, except for the use phase of the life cycle. It includes emissions from extracting raw materials, processing materials, manufacturing, transporting, and disposing of non-food goods, and accounts for 29 percent of U.S. greenhouse gas emissions. The goods in this system include all non-food products, all packaging (including for food), vehicles, and materials for buildings and construction (except for heavy infrastructure).

Emissions associated with vehicle manufacturing and building construction (including manufacturing of furnaces, hot water heaters, and air conditioners) cannot be separated from other products in the EPA data, so the Provision of Goods slice represents products in a very broad sense.

The use phases of products are split among various other slices in Figure 1. Aside from vehicles and buildings, the use phases of most products are included under “Use of Appliances and Devices.” This system accounts for 9 percent of U.S. greenhouse gas emissions. Combining Use of Appliances and Devices with Provision of Goods, that is, combining the use phase with other phases of the product life cycle, gives us one picture of the impact of products and packaging. Considering only emissions that are released within U.S. borders, the total share of U.S. greenhouse gas emissions associated with products and packaging is 37 percent.

Based on EPA’s formulation, the products represented in Use of Appliances and Devices represents a narrower set of products than what is represented in Provision of Goods. Depending on how broadly one defines products, the

combined estimate for the GHG impact of products either under-counts the impact of the use phase (because it excludes the use phase of air conditioners and cars, for instance), or an overestimate of the impact of the the production phases (because it includes those goods). Although 37 percent should not be considered a precise figure, we feel it is the best picture of the impacts of products and packaging available from the EPA data.

### **Products and packaging account for an even larger share of emissions when products imported for consumption in the U.S. are included.**

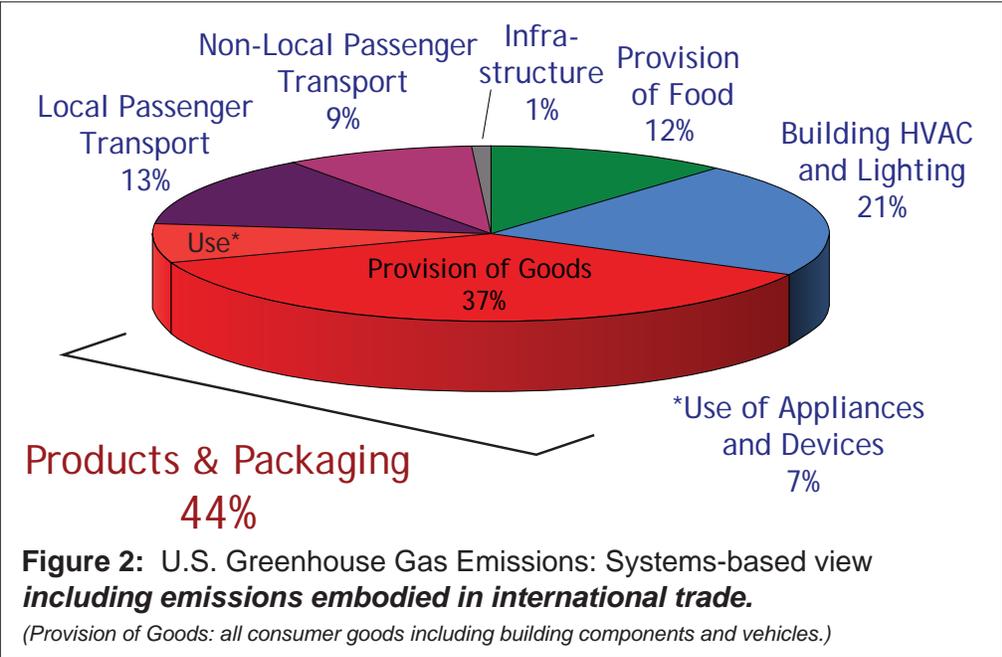
When one includes emissions from producing goods imported into and consumed in the U.S., products and packaging account for 44 percent of greenhouse gas emissions.

The EPA report referenced above includes only direct emissions in the U. S. However, a great deal of the products consumed here are produced elsewhere. The environmental impacts, including greenhouse gas emissions, from producing those products originate in other countries. Emissions that occur elsewhere but are driven by local consumption are referred to as “indirect” emissions. In the context of U.S. national greenhouse gas impacts, the indirect emissions are international.

Many approaches for reducing greenhouse gas emissions, for example a cap-and-trade system or renewable electricity standard, act on direct emissions. Implementing these approaches requires knowing where the emissions are physically released. In these cases, only domestic emissions can be addressed. The sectors view is useful in these cases because it tells you the share of emissions coming from a particular type of facility, like electric power plants.

Other approaches reduce emissions by changing the ways we produce, consume, and dispose of products and packaging. Manufacturers may improve their design or production process to reduce greenhouse gas impacts. Recycling systems can be improved. Or consumers may choose to buy more sustainable products. All of these changes can reduce emissions in other countries. In these cases, it makes sense to consider the life cycle emissions of products, including international emissions. EPA’s report, though it goes a long way to connecting these approaches to climate change by presenting the systems view, does not attempt to quantify the international impacts.

In the paper “Embodied environmental emissions in U.S. international trade, 1997-2004,” Weber and Matthews estimate that the carbon dioxide emissions from producing goods imported and consumed in the U.S. were equivalent to 13-30 percent of U.S. direct emissions in 2004.<sup>3</sup> Using output from the same model of emissions associated with international trade used in that paper,<sup>4</sup> we can break out the emissions associated with imported goods into the various systems in Figure 1. **Figure 2** shows a version of the systems



allocation of greenhouse gas that accounts for international trade. We can call this a consumption-based accounting of U.S. emissions, because it represents emissions from goods and services used and consumed in the U.S. (emissions from producing goods domestically that are consumed in other countries are subtracted).

From the consumption perspective, the U.S. greenhouse gas emissions pie is 12 percent bigger than the direct emission perspective in Figure 1. Also, products make up a larger share of this larger total. When one includes emissions from producing goods imported into and consumed in the U.S., products and packaging account for 44 percent of greenhouse gas emissions.

**Previous research on household carbon footprints shows similar results.**

The EPA report allocates greenhouse gas emissions at a national level. A similar accounting can be done at the state, local, or household level. Another recent study by Weber and Matthews assesses household carbon footprints using surveys of consumer expenditures.<sup>5</sup> Using data from that study,<sup>6</sup> we can show the shares of greenhouse gas emissions of various categories of consumption for the average U.S. household (see **Table 1**). By examining the components of each of Weber’s and Matthews’ consumption categories, we determined which categories best represent products and packaging. Grouping those categories together, we find that products and services account for 23 percent of the household carbon footprint when only U.S. direct emissions are considered.

**Table 1: Average U.S. household carbon footprint by consumption category, including international emissions embodied in imported goods.** Categories that best represent products and packaging are grouped to show total impact. Source: Weber and Matthews, 2008 and Weber, 2009.

Consumption Category	Total [tons CO <sub>2</sub> /household]	% Total
Food/Beverages	6.7	15%
Transportation	6.5	14%
Housing and Utilities	12.9	28%
Health	4.6	10%
Furnishings, Equipment, Maintenance	2.1	5%
Recreation and Culture	1.7	4%
Miscellaneous Goods/Services	7.6	17%
Clothing/Footwear	2.5	5%
Communications	0.7	1%
Education	0.6	1%
<b>Total</b>	<b>45.9</b>	<b>100%</b>
<b>Products &amp; Services Combined</b>		<b>33%</b>

By adding the international impacts of imports ... the share associated with products and services increases to 33 percent.

The value is not directly comparable to EPA's Provision of Goods slice discussed above for several reasons. The goods in EPA's slice include some products that are accounted for elsewhere in the household consumption categories, such as building materials and vehicles. The 23 percent value does not include energy used by appliances and devices, which is not separated from other building energy use in the household categories. Finally, the household consumption analysis does not account for government spending, which would shift the category shares. Overall, the systems view discussed above is most useful for framing broad government policies. The household view is most useful for consumers to understand and reduce their own footprints and for framing policies aimed at assisting or influencing consumers. However, given the very different perspectives (household versus national), differences in category definitions, and independent methodologies, the household carbon footprint study illustrates a similar point to the EPA report: products account for a large share of U.S. greenhouse gas emissions.

Weber and Matthews also find that by adding the international impacts of imports, the average household's carbon footprint increases by 54 percent, from 30 to 46 metric tons of carbon dioxide per year. The share associated with products and services increases to 33 percent, as shown in Table 1. Most of the 46 tons per year of emissions associated with the average household are indirect emissions. Only 8 tons of carbon dioxide per year are direct emissions, produced primarily by driving and home heating. A household "imports," in a sense, most of the goods and services that result in greenhouse gas emissions.

## **States and localities can control their greenhouse gas footprints by addressing products and packaging.**

Most states and localities import a high proportion of products relative to what they produce. So, as with households, the difference between direct emissions and consumption-based emissions can be pronounced. Consumption-based emissions come with more uncertainty and are more complex to calculate than direct emissions, which is part of why most official greenhouse gas inventories use only the direct approach. However, using consumption-based accounting allows one to pursue many more options for reducing a greenhouse gas footprint. A household using direct emissions accounting, for example, can only reduce its carbon footprint by driving less and turning the heat down, or perhaps buying a more efficient car or furnace. A household using consumption-based accounting could reduce its footprint by choosing lower-impact products, by reusing devices rather than buying new ones, by recycling, and many other strategies, in addition to driving less and turning down the thermostat.

When developing a state or local greenhouse gas inventory, a full consumption-based accounting may not be immediately possible due to data or analytical limitations. Efforts to develop consumption-based accounting systems for communities are underway in Oregon and elsewhere. However, one can use a hybrid approach that doesn't involve the complexity and data demand of accounting for all types of goods consumed locally, but that does include some consumption categories that can be influenced to reduce greenhouse gas emissions.<sup>7</sup> For example, using a hybrid approach the township of Maplewood, New Jersey, found that "solid waste", a category that includes the impacts from only a portion of all products, accounts for 9 percent of the community's total emissions and 13 percent of emissions that can be addressed locally.<sup>8</sup> The City of Denver found that "embodied energy in materials," a category that covers only a portion of impacts from products and packaging, accounts for 10 percent of total greenhouse gas emissions.<sup>9</sup>

If accounting for emissions associated with products, a state or locality can use strategies like recycling and waste prevention to meet greenhouse gas reduction targets. The State of Connecticut, for example, identified recycling and waste prevention as one of its top ten strategies to reduce greenhouse gas emissions.<sup>10</sup> The City of Ft. Collins, Colorado, estimates that it will reach 17 percent of its greenhouse gas reduction goals in 2020 through recycling.<sup>11</sup>

## **State, local, and federal governments should adopt policies to reduce the greenhouse gas impact of products and packaging.**

Products and packaging account for a substantial share of greenhouse gas emissions. In order to make the deep reductions in greenhouse gas emissions that are necessary to avoid catastrophic climate change, like the 83 percent reduction by 2050 that President Obama has called for,<sup>12</sup> emissions associated with products will clearly have to be reduced. Of the emissions under state and local control, those associated with products and packaging provide an opportunity for substantial and low-cost reductions. Most states and localities do not have influence over many sources of emissions in a sectors framework. They can not set their own regulations on industry, power plants, or vehicles. However, from a consumption standpoint, states and localities influence a much larger share of emissions.

**Because product design influences all the stages of the product life cycle, improving product design has the most potential to reduce greenhouse gas emissions associated with products.**

The EPA report “Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practice” calculates the greenhouse gas reduction potential of a variety of scenarios in waste prevention, recycling, and waste management. It finds that substantial greenhouse gas reductions are possible from these strategies. States and localities can capture the benefits in a variety of proven ways. For example, instituting Pay-As-You-Throw pricing for refuse reduces waste and encourages recycling. Improvements in recycling programs and infrastructure can also be a cost-effective way to reduce greenhouse gas emissions.

Many additional opportunities for reducing emissions can best be realized by improving product design and production. For the vast majority of products and materials that end up in a landfill, most of the environmental impacts occur during the production phase. Similarly, most of the benefits from reusing or recycling a product come from avoiding the extraction of raw materials and production of a new product to replace it.<sup>13</sup> Because product design influences all the stages of the product life cycle, improving product design has the most potential to reduce greenhouse gas emissions associated with products. Designs which improve product durability, reusability, recyclability, and materials efficiency all can reduce impacts from the production, transport, and disposal of products and packaging while reducing waste management burdens on local governments.

States and localities can encourage this type of design with Extended Producer Responsibility (EPR) policies.<sup>14</sup> EPR makes producers responsible for their products at end of life. For example, with a product take-back mandate, manufacturers and/or retailers are required to take back products after use. The mandate is typically coupled with a recycling rate target that producers must meet. Another approach is to hold producers financially responsible for their products through producer-managed advanced recycling

fees. The fee is charged according to product sales to cover the cost of recycling, and may in turn be used to subsidize recycling over disposal.

Many states, communities, and countries have successfully implemented EPR policies for a variety of product types. EPR programs are well-known to reduce waste associated with consumer products and documented increases in recycling have occurred in all countries which have implemented it.<sup>15</sup>

To learn more about EPR and other ways to reduce impacts from products and packaging, visit the Product Policy Institute at [www.productpolicy.org](http://www.productpolicy.org).

## Conclusions

This paper discusses two major findings. The first, supported by the new EPA report, “Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices,” is that products and packaging are associated with a large share of greenhouse gas emissions. A life cycle or systems perspective is needed to understand this impact. The second finding, illustrated by extending the EPA analysis here and supported by previous research by Weber and Matthews, is that the full impact of products can only be understood using consumption-based accounting. The greenhouse gas emissions associated with products are greater when the global impact of making products is taken into account.

Both the systems and consumption-based perspectives are more complex and entail greater uncertainty than the conventional sectors and direct-emissions paradigms. However, both provide more opportunities to reduce greenhouse gas emissions at low cost and with co-benefits. State and local governments can especially benefit from systems thinking and consumption-based accounting. This paper suggests improved recycling practices and Extended Producer Responsibility policies among the many tools available to reduce emissions associated with products.

## References

- 1 U.S. EPA. 2008. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2006. Available at: <http://www.epa.gov/climatechange/emissions/usinventoryreport.html>
- 2 U.S. EPA. 2009. Opportunities to Reduce Greenhouse Gas Emissions through Materials and Land Management Practices. [http://www.epa.gov/oswer/docs/ghg\\_land\\_and\\_materials\\_management.pdf](http://www.epa.gov/oswer/docs/ghg_land_and_materials_management.pdf)
- 3 Weber, Christopher L., and Matthews, H. Scott. 2007. “Embodied environmental emissions in U.S. International Trade, 1997-2004.” *Environmental Science and Technology*. 41: 4875—4881.
- 4 Weber, Christopher L. 2009. Personal communication. July.
- 5 Weber, Christopher L., and Matthews, H. Scott. 2008. “Quantifying the global and distributional aspects of American household carbon footprint.” *Ecological Economics*. 66: 379—391.
- 6 Weber, Christopher L. 2009. Personal communication. July.
- 7 Ramaswami, Anu, Hillman, Tim, Janson, Bruce, Reiner, Mark, and Thomas, Greg. 2008. “A demand-centered, hybrid life-cycle methodology for city-scale greenhouse gas inventories.” *Environmental Science and Technology*. Vol. 42, No. 17, pp. 6455—6461.
- 8 McCoy, Bob. 2009. “Waste Reduction and Recycling: A Key Element of a Community Greenhouse Gas Reduction Action Plan.” Northeast Forum on Climate-Waste Connections (webinar). Environmental Protection Agency. June 4.

States and localities can encourage this type of design with Extended Producer Responsibility (EPR) policies.

- 9 Mayor's Greenprint Denver Advisory Council. 2007. City of Denver Climate Action Plan. Available at: <http://www.greenprintdenver.org/about/climate-action-plan-reports/>
- 10 Governor's Steering Committee on Climate Change. 2005. Connecticut Climate Change Action Plan. Available at: <http://ctclimatechange.com/StateActionPlan.html>
- 11 City of Ft. Collins. 2008. Fort Collins Climate Action Plan. Available at: <http://www.fcgov.com/climateprotection/>
- 12 U.S. Climate Action Partnership. 2009. "Issue Overview: Comparison of Emissions Targets." Available at: <http://www.pewclimate.org/docUploads/USCAP-Issue-Brief-Target-Comparison.pdf>
- 13 U.S. EPA. 2006. Solid Waste Management and Greenhouse Gases: A Lifecycle Assessment of Emissions and Sinks. Available at: <http://www.epa.gov/climatechange/wycd/waste/SWMGHGreport.html>
- 14 Tojo, N., Lindhqvist, T. and Dalhammar, C. 2006. "Extended producer responsibility as a driver for product chain improvements." Contribution in Scheer, D. and F. Rubik. Governance of Integrated Product Policy: In Search of Sustainable Production and Consumption. Greenleaf Publishing.
- 15 Walls, Margaret. 2006. "Extended Producer Responsibility and Product Design." Resources for the Future. March.

**Data for Figure 1:**

U.S. GHG Emissions by System	MMTCO <sub>2</sub> E	% Total
Provision of Goods	2040	29.2%
Use of Appliances and Devices	581	8.3%
Provision of Food	895	12.8%
Local Passenger Transport	1019	14.6%
Infrastructure	72	1.0%
Building HVAC and Lighting	1719	24.6%
Non-Local Passenger Transport	666	9.5%
<b>Total</b>	<b>6992</b>	<b>100%</b>
<b>Products &amp; Packaging Combined</b>	<b>37.5%</b>	

**Data for Figure 2:**

U.S. GHG Emissions by System including Emissions Embodied in International Trade	Domestic [MMTCO <sub>2</sub> E]	Embodied In Trade [MMTCO <sub>2</sub> E]	Net [MMTCO <sub>2</sub> E]	% Total
Provision of Goods	2040	849	2889	36.9%
Use of Appliances and Devices	581	-20	561	7.2%
Provision of Food	895	11	906	11.6%
Local Passenger Transport	1019	16	1035	13.2%
Infrastructure	72	0	72	0.9%
Building HVAC and Lighting	1719	-61	1658	21.2%
Non-Local Passenger Transport	666	42	708	9.0%
<b>Total</b>	<b>6992</b>	<b>838</b>	<b>7830</b>	<b>100%</b>
<b>Products &amp; Packaging Combined</b>	<b>44.1%</b>			



# Product Policy Institute

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## About PPI

Product Policy Institute is a North American non-partisan, non-profit research, communication, and educational organization. It promotes policies that advance sustainable production, consumption, and good governance. Founded in 2003, PPI works with communities and their local governments to advocate for public policies that protect public health and safety and address climate change by encouraging waste prevention and clean production. PPI has helped local governments establish Product Stewardship Councils in California, New York, Vermont, and Texas, and is currently working in other states.

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## **San Francisco Bay Area Green Business Program**

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Coordinator: Phone 510/464-7961 Fax 510/433-5561 e-mail: [ceils@abag.ca.gov](mailto:ceils@abag.ca.gov)

November 24, 2009

To: Hazardous Waste Management Facility Allocation Committee  
Committee Alternates  
Technical Advisory Committee

From: Ceil Scandone  
Regional Coordinator

Re: Green Business Program Update and New Checklist Approval

### **Green Business Program Update**

#### **Executive Summary**

In the past several months, the Program has concentrated on three activities: new business certification and re-certifications; completing Phase 1 development of the new Measurement and Management system; finalizing updates to the Pollution Prevention sections of our checklists and completing the development of one new checklist for Janitorial Services. As is required under Program policy guidelines, we are seeking Committee approval for the attached Janitorial Services checklist.

Apart from reporting on the progress of our program, which is amplified below, we are please to report that the City of Los Angeles has selected a team of consultants to organize, launch and operate their Green Business Program. The Program will be based on our Bay Area model.

#### **Certifications**

The Green Business Program continues to recruit and certify new businesses despite the slow economy. Collectively, the counties added 220 new businesses since the Committee met in May, bringing the regional total to 1,973. The Program will meet its 2009 goal of reaching 2,000 certified businesses by December 31.

We expect that the total number of businesses certified in the Bay Area in 2009 will be approximately 400. That number is down by approximately 15% from 2008's total of 470 businesses certified. That reduction can be attributed to a few factors:

- county staff have spent significant numbers of hours on developing the measurement and management system. That process has been particularly intensive in the last three months, affecting the ability to work with new businesses. Eventually the system will streamline the certification process,

enabling coordinators to work with more businesses. But in the short term, system development is affecting capacity;

- program coordinators and partner agencies completed checklist updates that raised the bar, particularly in the energy and water conservation sections. In an economic downturn, it may be a stretch for businesses to implement all the actions required for certification;
- local staff capacity has been affected by the recession and resulting fiscal woes. Green Business coordinators are managing multiple projects and may have had less time to devote to the Program in 2009.

Given these factors, the number of new businesses certified in the past 12 months speaks well of the Program's visibility and to the commitment of the county coordinators and their partners.

### **Measurement / Management System**

System infrastructure and the build out of the Phase 1 features have been completed. The county coordinators are in the process of uploading their industry checklists and testing the system to ensure that it works correctly and smoothly before the system is used for newly-recruited businesses. As with many new systems, this one has glitches that the coordinators and contractor are working diligently to resolve. When fully operational, the system will greatly streamline the certification and web listing processes.

One feature that ABAG is particularly looking forward to is the automatic searchable directory. That tool will greatly reduce the amount of ABAG staff time needed to update the business listings on our website. It will update automatically when a business is certified, and eventually provide businesses the opportunity to add descriptive information, logos and photos to their listing, making it a more effective marketing tool.

Unfortunately, the Searchable Directory feature currently is not developed to an acceptable level of functionality. We have delayed launching it until Phase 2 of the project, when it is more fully developed. In the interim, ABAG's webmaster is considering the possibility of creating a simplified searchable Directory on our own Bay Area website.

### **New Checklist Development**

As reported at the May meeting, a number of county programs in the Bay Area and elsewhere in the state have received inquiries from commercial cleaning companies. In addition, property management companies interested in implementing more environmentally responsible operations are seeking custodial companies that provide greener services. Green Business Program certification can help management companies, public agencies and institutions such as hospitals and schools identify qualified contractors.

Several months ago, the Bay Area coordinators initiated the process of developing a checklist for Janitorial Services. Fortunately, our colleagues in the Monterey Bay Area Green Business Program had already developed a janitorial checklist for their region. Our coordinators and their partners reviewed and revised the Monterey Bay Area version to ensure it reflected local regulations, best management practices and environmental priorities. The resulting checklist was pilot-tested with a few companies and is submitted to the Committee for approval.

**Action Requested:**

Approve the Janitorial Services Checklist.



## Resource Conservation & Pollution Prevention Checklist for Janitorial Services

Business \_\_\_\_\_  
 Contact \_\_\_\_\_  
 Phone \_\_\_\_\_  
 Address \_\_\_\_\_  
 \_\_\_\_\_  
 Email \_\_\_\_\_  
 Fax \_\_\_\_\_  
 Web \_\_\_\_\_

### Why should my business get certified as a Green Business?

- ◆ Saving energy, water and raw materials saves you money. Sending less trash to the landfill saves you money, too.
- ◆ Developing a positive, proactive relationship with local compliance inspectors can help you avoid liability, fines and other sanctions.
- ◆ The Program promotes Green Businesses to the public and other businesses (again, for free)!
- ◆ Your company's community image is enhanced through Green Business certification.
- ◆ Your employees will enjoy a safer workplace and will have one more reason to take pride in working for you.
- ◆ The Green Business Program offers you free, convenient, time-saving assistance.

### Do I get credit for the good things I'm already doing?

Yes! In fact, your company may already qualify. These Standards are designed to fit most businesses, **but** if certain measures are not applicable or feasible for your facility and operations, you may request an exemption or demonstrate alternative measures.

### Do I have to do everything on the checklist to become a Green Business?

No, there are many ways to qualify. You must meet the minimum standards in each category. Beyond that, you may use the checklist to identify "next steps" to becoming even greener.

### What if I haven't had an energy, water or solid waste audit already?

The Green Business Program can arrange an audit for you as part of your certification.

### How do I get started?

Read the checklist and check all boxes that apply. Call xxxxxxxxxxx, Green Business Coordinator, at xxxxxxxxxxxxxxx with any questions.

### Is there a fee to be certified as a Green Business?

No, Green Business certification is free!

#### **GREEN NOTE:**

**Going Green Counters Climate Change**  
 Climate Change results from increases in greenhouse gases, like carbon dioxide and methane, trapping heat that would otherwise escape the atmosphere. You can reduce this build-up (and your carbon footprint) by being green! Our checklist has many climate-friendly measures, such as:

- ◆ **Conserve energy** with fluorescent lights and Energy Star equipment.
- ◆ **Reduce waste** at the landfill (and methane gas emissions)—recycle, compost and buy products with recycled content.
- ◆ **Conserve water** (and the energy to deliver it) with low-flow toilets and drought tolerant plants.
- ◆ **Invest in renewable energy** with renewable energy credits and solar panels.
- ◆ **Conserve fuel** by taking public transit, your bike or a high MPG vehicle.

## General Standards for All Businesses

### Certification

To be certified a Green Business you must:

1. Comply with all environmental regulations applicable to your business. Please ask staff about this.
2. Implement a variety of measures to save energy, water and other materials, and reduce waste. **This checklist walks you through this step!**
3. Allow site visits to verify that your business meets the above two steps.
4. Pledge to continue these terrific efforts to prevent pollution and conserve resources (including environmental compliance).

**Green Businesses** practicing resource efficiency are assuming stewardship for the Earth and its resources, with the goals of achieving a successful business operation, a healthy bottom line, and sustenance of the environment and its inhabitants. A Green Business not only conserves resources but educates employees and customers about resource conservation.

**Re-certification:** Certification as a Green Business is good for **three years**. We strongly encourage continuous improvement. When it's time to recertify, we will ask you to show us additional measure(s) you have implemented.

### Measures

The following general measures are required for all businesses:

- Track water and energy usage and solid and hazardous waste generation.
- Adopt a written environmentally preferable (or green) purchasing policy. Find examples at <http://www.stopwaste.org/home/index.asp?page=439>.
- Establish a 'green team' that can help guide efforts to green your business.
- Provide 3 on-going incentives or training opportunities to encourage management and employee participation in the Green Business Program. For example, incorporate Green Business into:
  - ◆ Performance appraisals, job descriptions, training programs, employee orientations
  - ◆ Staff meeting discussions
  - ◆ Your employee reference materials
  - ◆ Your company newsletter or bulletins
  - ◆ Your company suggestion and reward programs
- Inform your customers about your business' environmental efforts and what you are doing to meet the green business standards. For example:
  - ◆ Post the Green Business logo, certification and pledge in a visible location.
  - ◆ Post reminders listing steps you are taking to be a Green Business.
  - ◆ Offer tours that highlight your Green Business successes.
  - ◆ Offer customers "green" service or amenities options.
  - ◆ Highlight your Green Business efforts and/or certification on your website, and link it to the GBP home page.
- Assist at least one other business in learning about becoming a Green Business. Encourage them to enroll in the Green Business Program and provide their contact information to your GBP coordinator.

## Solid Waste Reduction & Recycling

### Measures

1. **Look in your garbage dumpster annually to see if there are items that could instead be reused by someone else or recycled.**

2. **REDUCE waste in 7 ways.**

- Purchase chemical products and supplies in bulk to minimize the amount of packaging waste and energy used for transportation.
- Buy concentrated cleaners and properly dilute on site.
- Buy cleaning equipment such as vacuum cleaners, mop buckets, mops, that are more durable and energy efficient in order to extend life expectancy and reduce waste.
- Use electronic billing methods to invoice customers and receive payments.
- Discourage the printing of emails.
- Set copier/printer defaults to double-sided.
- Practice efficient printing and copying by using the size reduction feature—print two pages of a document or book onto one page.
- Use computer fax modems that allow faxing directly from computers without printing.
- Eliminate fax cover sheets by using "sticky" fax directory notes.
- Eliminate unnecessary forms, redesign forms to use less paper, or switch to electronic forms.
- Reduce all unwanted mailings:
  - Eliminate duplicates by returning labels requesting all but one be removed.
  - Reduce junk mail. Guidance and a PDF kit are at <http://stopjunkmail.org> Reduce catalogs at [www.catalogchoice.org](http://www.catalogchoice.org)
  - Eliminate duplicates in your own mailing lists.
- Design marketing materials that require no envelope – simply fold and mail.
- Buy products in returnable or reusable containers.
- Work with vendors to minimize packaging.
- Eliminate the use of non-recyclable packaging, such as Styrofoam.
- In the lunch/break room, replace disposables with permanent items (e.g., mugs, dishes, utensils, towels/rags, coffee filters, etc.) and use refillable containers for sugar, salt &

pepper, etc. to avoid individual condiment packets.

- Serve dishes at office events in reusable serving dishes.
- Eliminate single-use plastic water bottles.
- Centralize purchasing to eliminate unnecessary purchases and ensure all waste reduction purchasing policies are followed.
- Use optical scanners, which give more details about inventory, for more precise ordering.
- Lease, rather than purchase, computers and printers.
- Leave mowed grass on lawn ("grasscycling").
- Other: \_\_\_\_\_

3. **REUSE materials in 3 ways.**

- Use reusable/washable cloths instead of disposable paper towels.
- Reuse spray bottles, making sure they are labeled accurately.
- Use a laundry service that provides reusable bags for dirty and clean linen.
- Reuse garbage bag liners in dry garbage cans.
- Print on previously printed paper, or designate a tray on printers as a "draft" tray.
- Reuse office paper as scratch paper.
- Reuse envelopes by covering old addresses and postage, and affixing new.
- Have your customers return packaging to you for reuse.
- Reuse paper or plastic packaging materials.
- Designate a reuse area for office supplies such as binders, folders and staplers.
- Have your toner cartridges refilled for use.
- Donate furniture, supplies, scrap materials, etc., or use a waste exchange program where another business can take your unwanted items ([www.ciwmb.ca.gov/CalMAX](http://www.ciwmb.ca.gov/CalMAX)).
- Other: \_\_\_\_\_

**4. RECYCLE all of the required materials and at least one additional material at your office and at job sites (if the client has a recycling program).**

- REQUIRED:** Cardboard
- REQUIRED:** Newspapers, office/mixed paper, junk mail
- REQUIRED:** Glass bottles and jars
- REQUIRED:** Metal cans, containers, aluminum foil
- REQUIRED:** Plastic bottles and containers
- Other plastics
- Scrap metal
- Landscape trimmings (green waste)
- Food waste for composting
- Wood, including pallets
- Carpeting
- Other: \_\_\_\_\_

- Sell products made with recycled content.
- Purchase or obtain previously used furniture, supplies or materials (ciwmb.ca.gov/CalMAX, freecycle.org, Craig's List). List examples:
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
- Other: \_\_\_\_\_

**5. Buy the first required item and at least three more items with recycled content.**

Purchasing products made from recycled materials conserves resources and is essential to support the recycling market.

- REQUIRED:** Copier/printer paper with at least 30% post-consumer waste.
- REQUIRED:** Paper towels with 35% post-consumer waste.
- Copier/printer paper with 100% post-consumer waste.
- Written policy guiding purchase that emphasizes buying recycled-content and low-toxicity products.
- Paper towels.
- Toilet seat covers.
- Toilet paper.
- Tissues.
- Garbage bags.
- Folders or other paper products.
- Envelopes.
- Letterhead.
- Business cards.
- Boxes or bags for retail use or shipping.
- Recycled or remanufactured laser and copier toner cartridges.
- Carpet, carpet undercushion, or flooring.
- Remodeling/construction materials: cabinets, fixtures, ceramic and ceiling tiles, drywall, insulation, interior paneling, composite lumber/wood, roofing, concrete, etc.

## Energy Conservation

### Measures

**1. REQUIRED: Complete regularly scheduled maintenance on your HVAC (heating, ventilation and air conditioning) and refrigeration systems at least twice a year.**

- Clean permanent filters with mild detergents every two months (change replaceable filters every two months).
- Check entire system each year for coolant leaks, duct sealing, clogs, and obstructions of air intake and vents.
- Clean condenser coils of dust and lint.
- Clean evaporator coils of excessive frost.
- Inspect and repair economizers on AC systems.
- Assign a person to monitor each energy bill for sudden rises in energy use.

**2. Save energy in 7 ways (including all required measures).**

#### EQUIPMENT & FACILITY

##### General

- Offer HVAC cleaning services to your clients (filters and coils as listed above), informing them of the increased energy efficiency from doing so.
- Use office equipment with energy saving features (e.g. ENERGY STAR<sup>®</sup>) and ensure ENERGY STAR settings are enabled.
- Use power management software programs that save energy by automatically turning off idle monitors and printers (must be purchased separate from computer).
- Use sensors on cold vending machines and place machines in shaded areas.
- Use weather stripping (weatherizing and caulking) to seal air gaps around doors and windows.
- Insulate all hot water pipes.
- Use instantaneous hot water heaters at point of use.
- Use a solar water heater or preheater.
- Purchase ENERGY STAR<sup>®</sup> qualified refrigerators.

- When repainting building exterior and roofs, choose light colors to reflect more sunlight.
- Other: \_\_\_\_\_

##### Lighting

- REQUIRED:** Replace all T-12 fluorescent lighting with energy-efficient T-8 or T-5 fixtures with electronic ballasts or other equivalent efficacy lighting.
- REQUIRED:** Replace any incandescent bulbs with efficient compact fluorescents or other high efficacy lamps (lumens/watt >50) where appropriate.
- REQUIRED:** Improve exit sign efficiency to less than 5 watts per sign by using LED, electroluminescent, photoluminescent or other applicable signs.
- Reduce number of fixtures or lamps per fixture where appropriate and increase lighting efficiency by installing optical reflectors and/or diffusers.
- Use lighting controls such as dual technology occupancy sensors, bypass/delay timers, photocells, or time clocks, especially in low occupancy areas such as closets and restrooms.
- Use dimmable ballasts and daylight controls such as astronomical clocks to dim lights to take advantage of daylight.
- Other: \_\_\_\_\_

#### **GREEN NOTE:**

*Outdoor lighting offers an excellent opportunity to conserve energy as it often remains on for long hours. Using efficient lights (e.g., compact fluorescents) and timer controls or photo sensors, can reduce wasted energy and your monthly bill. This measure alone may reduce energy use by 15%.*

*ENERGY STAR<sup>®</sup>-compliant monitors have power management features and consume up to 90% less energy. Screen savers don't save energy!*

*ENERGY STAR<sup>®</sup> copiers and fax machines can reduce their annual electricity costs by about 60% and 50% respectively.*

Heating, Ventilation & Cooling

- Use a 365 day programmable thermostat to control heating and air conditioning.
- Use economizers on A/C to increase air circulation.
- Supplement AC systems with evaporative coolers on condensers.
- Replace single or package A/C unit with one that exceeds Title 24 building standards.
- Use CO2 occupancy sensors to control air conditioning and heat.
- Provide shade for HVAC condenser, especially roof-top units.
- Shade sun-exposed windows and walls: use awnings, sunscreens, shade trees or shrubbery.
- Apply window film to reduce solar heat gain on clear, single-pane non-Northern facing windows. Refer to your energy provider for specifications and rebates.
- Use energy-efficient double paned windows on at least 90% of windows.
- Other: \_\_\_\_\_

Motors & Pumps

- Use an outside air intake (cool air takes less energy to compress).
- Use engineered nozzles and fittings to reduce "waste" compressed air.
- Control compressor system to ensure operation only during working hours.
- Install Variable Frequency Drives on pumps or motors for air handlers, pools and chillers.
- Downsize oversized motors or replace a large motor with several small motors that can be run individually to meet smaller tasks (about 30% of motors operate at less than 50% of full load).
- Purchase a more efficient motor instead of rewinding an older one.
- Other: \_\_\_\_\_

**OPERATIONAL PRACTICES:**

General

- Institute a written policy that all electronic devices and lighting be turned off when not in use and use light switch reminders to remind staff.
- Rearrange workspace to take advantage of areas with natural light and design for increased natural lighting when remodeling.
- Other: \_\_\_\_\_

Lighting

- Clean lighting fixtures, diffusers and lamps twice a year so they are lighting as effectively as possible (dirt can reduce lighting efficiency by up to 50%).
- Properly set and maintain lighting control devices (current time and on/off schedule) such as time clocks, photocells and sensors and adjust for season.
- Use task lighting instead of lighting the entire area.
- Other: \_\_\_\_\_

Heating, Ventilation & Cooling

- Set thermostat to 78° F for cooling, 68° F for heating and use the thermostat's night setback.
- Seal off unused areas. Block and insulate unneeded windows and other openings.
- Other: \_\_\_\_\_

**GREEN NOTE:**

*A simple tune-up can increase the energy efficiency of your furnace by 5% and you can save up to 10% by insulating and tightening up ventilation ducts.*

*Ceiling fans use 98% less energy than central A/C units. And heating with natural gas instead of electricity can be 40-56% more efficient.*

## Water Conservation

### Measures

#### 1. Save water in these REQUIRED ways.

- To clean outdoor hard surfaces, do not hose or spray them down, and ensure staff follow this rule. Call your water company for any exceptions.
- Do not leave water running when cleaning areas such as restrooms or kitchens.
- Assign a person to monitor each water bill for sudden rises in water use. Call your water company should this happen. You can also ask for ways to save water.
- Regularly check for and repair all leaks in your facility. Leaks in toilet tanks can be detected with leak detecting tablets, which may be available from your water company.
- Install low-flow aerators and showerheads (your water company may offer these for free):
  - As low as 0.5 gpm and no greater than 2.5 gpm for lavatory sinks
  - 2.0 gpm or less for kitchen sinks
  - 2.0 gpm or less for showerheads
- Use signs in restrooms to encourage water conservation and to report leaks.
- If you have landscaping/irrigation:
  - Install matched precipitation rate sprinkler heads in turf areas.
  - Test irrigation sprinklers 4 times per year to ensure proper operation and coverage and repair all broken or defective sprinkler heads/nozzles, lines and valves.
  - Adjust sprinklers for proper coverage—optimize spacing, avoid runoff onto paved surfaces.
  - Water during early morning, pre-dawn hours to reduce water loss from evaporation.
  - Use repeat cycles when watering turf or shrubs to encourage percolation and deep root growth.
  - Adjust the irrigation schedule monthly during irrigation season, or as needed.

#### 2. Save water in three other ways, including the first required way.

Consider areas of greatest water use (facility or landscaping) in choosing new measures. Be sure to ask your water company about rebates.

##### Facility:

- REQUIRED:** Install toilets using 1.6 gpf (gallon per flush) or less.
- Go beyond the above 1.6 gpf toilets to 1.3 gpf HETs (High Efficiency Toilets)! Check both this measure *and* the above one. Ask your water district for rebates when replacing 3.5 gpf or higher toilets with the HETs.
- Provide additional urinals in men's restroom and reduce number of toilets (urinals use less water than toilets).
- Replace flush mechanism in urinals with ones that flush at 1.0 gallon or less (as low as 0.125 gpf) or install new waterless types.
- Notify clients of any water leaks you see in their facility.
- Set up an annual program to educate staff about the benefits of efficient water use.
- Schedule your water company to make a presentation to staff to encourage water conservation at home. (Some water companies offer training and "take home" conservation kits.)
- Indoors, use dry floor cleaning methods, followed by damp mopping, rather than spraying or hosing with water.
- Offer clients an "as required", instead of "periodic", window cleaning schedule. Do the same for your facility.
- Reduce water pressure to no higher than 50 psi by installing pressure reducing valves.
- Adjust boiler and cooling tower blowdown rate to maintain TDS (total dissolved solids) at levels recommended by manufactures' specifications.
- Replace water-cooled equipment, such as air conditioning units, with air-cooled.
- Other: \_\_\_\_\_

Landscaping:

- Mulch all non-turf areas.
- Plant drought tolerant plants (assistance is available from your water company).
- Hydrozone: Group plants with similar water requirements together on the same irrigation line, separating plants with different water requirements on separate irrigation lines.
- Reduce area of turf.
- If installing new turf, limit area and use drought tolerant species, space sprinkler heads such that the water from one sprinkler head reaches the adjacent sprinkler heads.
- Modify your existing irrigation system to include drip irrigation.
- Install rain shut-off devices that turn off the irrigation system during rain.
- Install irrigation controllers that have at a minimum the following features: precise 1-minute runtime capability; a minimum of 3 separate programs; and 3 cycle start time features.

- Reduce irrigation system water pressure to no higher than 50 psi (pressure-reducing valves must be installed to do this).
- Use reclaimed water for irrigation and other approved uses.
- Install a self-adjusting weather-based irrigation controller that automatically tailors watering schedules to match local weather, plant types, and other site-specific conditions. Controller must be certified under the Irrigation Association's SWAT protocol.
- Work with your water company to develop a site-specific "water budget". Track your water use to ensure efficient watering.
- Other: \_\_\_\_\_

**GREEN NOTE:**

*A faucet with a slow leak can waste 10 gallons of water a day, or more!*

*A single leaky toilet can waste as much as 1000 gallons of water per day.*

## Pollution Prevention

### Measures

#### 1. Assess your cleaning practices and your office to identify ways to prevent pollution. Review the plan annually for new measures to implement:

- ◆ Check Material Safety Data Sheets (MSDS) and labels for all cleaning products, building maintenance materials, pesticides, and fertilizers you use. Identify safer alternatives. Avoid products with labels containing Prop. 65 warnings.
- ◆ Properly label all cleaning products to ensure correct use by staff, reduce liability, and ensure clients know what is being used.
- ◆ Call your local Household Hazardous Waste Program for disposal of hazardous substances not in use.

#### 2. Practice good housekeeping in 7 ways:

##### Cleaning Practices:

- REQUIRED:** Discharge dirty water to sanitary sewer (sinks, toilets) and not the storm drain.
- Sweep prior to wet-cleaning floors.

##### Storage, cleaning closets and workshop areas:

- Store deliveries and supplies under a roof.
- Store any potentially hazardous materials securely, control access and rotate stock to use oldest material first.
- Provide secondary containment for large amounts of liquid supplies.
- Use pipes or hoses for transferring cleaners or other chemicals to prevent spills and splashes.
- Locate and handle all potential pollutants away from food preparation, service and storage areas as well as sewer and storm drains.
- Routinely check storage areas, pipes and equipment for leaks, spills and emissions of chemicals, paints, and cleaners; repair any deficient items found.

##### Outdoor walkways, parking lots, and driveways:

- REQUIRED:** Do not wash cars, equipment, floor mats or other items outside where runoff water flows straight to the storm drain; this

wash water should be directed to a sewer drain.

- REQUIRED:** Keep dumpsters covered and impermeable to rainwater. Prevent overflowing and keep dumpster/parking areas clean.
- REQUIRED:** For clients or your own facility: If using water to clean parking or other outdoor areas, hire a BASMAA- certified mobile cleaner ([www.basmaa.org](http://www.basmaa.org)). Contractor must use equipment that collects wash water and disposes to sanitary sewer.

#### **GREEN NOTE: Only Rain Down The Drain!**

*The storm drain system is separate from the sanitary sewer system, and pollutants that enter these drains flow directly into creeks and the bay without treatment. Educate personnel about this difference and the importance of not letting contaminants enter storm drains.*

*All businesses are required to prevent anything except rainwater from entering storm drains from any of the following activities or sources:*

- ◆ Loading docks
- ◆ Dumpster areas
- ◆ Outdoor working areas
- ◆ Storage areas
- ◆ Landscaping
- ◆ Construction
- ◆ Cleaning equipment/tools
- ◆ Pre-painting
- ◆ Power-wash water
- ◆ Washing vehicles
- ◆ Cleaning parking lots

*Monitor subcontractors to ensure their activities are not polluting storm drains. Prevent erosion during all landscape, construction or other activities. Ask your county coordinator for a list of mobile cleaners.*

- Post signs for staff at targeted trouble spots to explain proper practices to prevent pollutants from reaching storm drains.
- Keep temporary storm drain plugs and spill kits handy to catch/collect spills.

- Regularly check and maintain storm drain openings, clearing them of litter, debris and soil. If outdoor areas are cleaned for clients, offer them this service.
- Clean private catch basins at your facility annually before the first rain and as needed thereafter. If outdoor areas are cleaned for clients, offer them this service.
- Label all storm water drains with “No dumping, Drains to Bay” message.
- Mulch, use ground cover, or use a barrier to prevent exposed soil from washing landscaped areas into storm drain.
- Other: \_\_\_\_\_

**3. Use 5 less toxic janitorial products:**

- REQUIRED:** Use no products with added antibacterial agents, such as triclosan. This includes products used for hand washing, dishwashing and cleaning.
- Screen all products for hazard/toxicity prior to using. Obtain Material Safety Data Sheets (MSDS) for all products used.
- Use Green Seal, New American Dream ([newdream.org/consumer/cleaners.php](http://newdream.org/consumer/cleaners.php)), EcoLogo and EPA’s Design for the Environment certified products whenever possible. List products:
  - \_\_\_\_\_
  - \_\_\_\_\_
  - \_\_\_\_\_
- Avoid these chemicals:
  - Hydrochloric Acid
  - Phosphoric Acid
  - Sodium Hydroxide
  - Sodium Metasilicate
  - Potassium Hydroxide
  - Ethanolamine
  - Toluene
  - Alkyl Phenol Ethoxylates
  - Paradichlorobenzene (Urinal Blocks),
  - Quaternary Ammonium Chloride (Quats)
  - Ammonia (Ammonium Hydroxide)
  - 2-butoxyethanol (butyl)
- Use a chlorine-free bleach alternative for whitening such as hydrogen peroxide based cleaners (instead of hypochlorite based bleaches).
- Use non-chlorinated abrasive powders (i.e. Bon Ami).
- Use microfiber mops and cloths to replace chemical cleaners and to use less water.

- Use an abrasive sponge or pumice stone in place of strong chemicals to remove grime or deposits.
- Use a vinegar/water mixture instead of alcohol or ammonia-based window cleaners.
- Use mild detergents or soaps in place of cleaners with alcohol, ammonia, or caustic ingredients.
- If water softeners are used, use potassium chloride instead of sodium salt, or use an exchange service instead of an automatic regenerating unit in areas where treated wastewater is recycled for agricultural purposes.
- Switch from commercial air fresheners to potpourri or vinegar & lemon juice.
- Purchase laundry detergents that have no phosphates.
- Other: \_\_\_\_\_

**4. Reduce chemicals used in 5 ways.**

- REQUIRED:** Replace all aerosols with pump dispensers, if available.
- Use one or a few low-toxicity multipurpose cleaners, rather than many special-purpose cleaners.
- Whenever possible, use spray bottles to apply cleaners, rather than mixing a bucket, so that less cleaner is used.
- When using concentrated formulas, use the lowest concentration of cleaners that will do the job.
- Limit use of disinfectants only to areas or surfaces where pathogens collect and breed, such as in restrooms or on door handles, bathroom faucets, and other fixtures.
- Use low- or no-VOC paint products.
- REQUIRED:** Eliminate or reduce use of pesticides using Integrated Pest Management (IPM). IPM utilizes good housekeeping, pest monitoring and exclusion as well as less toxic pesticides and/or non-chemical pest control methods when needed. Implement all applicable measures:
  - Keep kitchen, waste storage and other areas clean to prevent pest problems.
  - When pest control is necessary, use traps, barriers and less toxic pesticides (e.g soaps, oils, microbials and baits). Apply on as-needed (vs. set) schedule.
  - Do not use perimeter ant spraying.
  - If contracting with a pest control operator, choose one that is EcoWise Certified

([www.ecowisecertified.com](http://www.ecowisecertified.com)), or specify in pest control contracts that primary pest management methods include non-chemical pest prevention and pest exclusion.

- Do business with other “green” vendors or services, such as certified Bay Area Green Businesses (listings at [www.greenbiz.ca.gov](http://www.greenbiz.ca.gov)).

List examples: \_\_\_\_\_

- Purchase organically or locally grown foods and beverages for the office kitchen. List

examples: \_\_\_\_\_

- Use natural or low emissions building materials, carpets or furniture.
- Replace standard fluorescent lights with low or no mercury fluorescent lights. Approved models are Phillips F17T8/AD850/Altoll and Sylvania Fo17/850/xp/Eco.
- Obtain a battery recharger for the office. Use rechargeable (instead of disposable) batteries for flashlights, radios, remote controls and other devices that use standard batteries.
- Use recycled oil for vehicles/equipment.
- Use unbleached and/or chlorine-free paper products (copy paper, paper towels, napkins, coffee filters, etc.).
- Print promotional materials with vegetable or other low-VOC inks.

- Other: \_\_\_\_\_

**5. Recycle/reuse 3 of the following potential pollutants**

- REQUIRED:** Properly store and recycle Universal Wastes as required by law. Designate a storage area for spent Universal Wastes, posting a sign and notifying employees of this area. Ensure that these are recycled (and not put into the garbage). Universal Wastes are:

- Spent fluorescent light tubes & bulbs
- Electronic equipment (computers, cell phones, pagers, etc.)

- Batteries (RBRC recycles these for free! [www.rbrc.org](http://www.rbrc.org))

- Excess paint/solvents (keep only what’s needed for touch ups, then give remainder to hazardous waste collection program, donate to anti-graffiti program, or return to contractor or manufacturer).
- Used copier toner cartridges (take back to supplier or send back to manufacturer for recycling or refilling).
- Ink jet cartridges (send or take back for recycling or refilling).
- Car fluids from company vehicles.
- Donate for reuse (not just recycle) electronic equipment, such as computers, phones, pagers, etc.
- Other: \_\_\_\_\_

**6. Reduce vehicle emissions in 3 ways:**

- REQUIRED:** Join the Air District’s “Spare the Air” program (see box below) and notify staff of “Spare the Air” days.
- When possible, arrange for a single vendor who makes deliveries for several items.
- Patronize services close to your business (e.g., food/catering, copy center, etc.) and encourage employees to do the same.
- Carefully plan delivery routes to eliminate unnecessary trips.
- Keep company vehicles well maintained to prevent leaks and minimize emissions; encourage employees to do the same.
- Other: \_\_\_\_\_

**SPARE THE AIR PROGRAM**

*Spare the Air Days are called when air quality is expected to be unhealthy. Participating businesses receive Spare the Air Day email alerts and free information on ways to improve air quality. Join by visiting the Bay Area Air Quality Mgmt. District’s website at [www.SparetheAir.org](http://www.SparetheAir.org). Click “subscribe to AirAlert email notices” on the right pane.*

Commute Alternatives

- Make transit schedules, commuter ride sign-ups, etc. available to staff. Get help from [www.511.org](http://www.511.org) using their “Ridematch Tool”.

- Offer telecommuting opportunities and/or flexible schedules so workers can avoid heavy traffic commutes.
- Hire locally.
- Other: \_\_\_\_\_

Commute Alternatives for Larger Employers

- Offer lockers and showers for staff who walk, jog or bicycled to work.
- Offer secure bicycle storage for staff and customers.
- Offer employee incentives for carpooling or using mass transit (e.g. guaranteed ride home or subsidized transit passes).
- Set aside car/van pool parking spaces.
- Provide commuter van.
- Encourage bicycling to work by offering rebates on bicycles bought for commuting.
- Offer a shuttle service to and from bus, train and/or light rail stops.

Other Greenhouse Gas Emissions

- Complete a CO2 or eco-footprint calculator to determine your own greenhouse gas emissions.
- Convert company vehicles to low emission vehicles (electric, hybrid, natural gas or alternative fuels).
- Offer electric vehicle recharge ports for visitors and staff using electric vehicles.
- Use biodiesel (100% or blends) or vegetable diesel in place of petrodiesel in vehicles.
- Install renewable energy sources, such as solar panels or wind generators.  
System Size: \_\_\_\_\_
- Buy renewable energy credits or green tags to offset the GHG emissions from your business's travel and use of energy (see [www.green-e.org](http://www.green-e.org), [livenneutral.org](http://livenneutral.org) and [terrapass.org](http://terrapass.org)).
- Offset your company's emissions by participating in PG&E's Climate Smart Program ([www.joinclimatesmart.com](http://www.joinclimatesmart.com)).
- Other: \_\_\_\_\_