



**COUNTY OF LOS ANGELES**  
**DEPARTMENT OF PUBLIC WORKS**

*"To Enrich Lives Through Effective and Caring Service"*

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**GAIL FARBER, Director**

September 21, 2010

The Honorable Board of Supervisors  
County of Los Angeles  
383 Kenneth Hahn Hall of Administration  
500 West Temple Street  
Los Angeles, California 90012

Dear Supervisors:

**ADOPTED**

BOARD OF SUPERVISORS  
COUNTY OF LOS ANGELES

29 SEPTEMBER 21, 2010

*Sachi A. Hamai*  
SACHI A. HAMAI  
EXECUTIVE OFFICER

**EXPANDED POLYSTYRENE FOOD CONTAINERS  
(ALL SUPERVISORIAL DISTRICTS)  
(3 VOTES)**

**SUBJECT**

This action is to restrict the purchase and use of expanded polystyrene food containers at County operations, effective 60 days following this Board action.

**IT IS RECOMMENDED THAT YOUR BOARD:**

1. Adopt a prohibition on the purchase and use of expanded polystyrene food containers, within 60 days following this Board action to the extent not already initiated, at County facilities, County offices, County-managed concessions, and by commercial food and beverage suppliers at County permitted events and County-sponsored events, with exceptions to allow additional time as specified and discussed below for the Chief Executive Office, Sheriff, and Departments of Health Services, Probation, Community and Senior Services, and Beaches and Harbors.
2. Direct the County Office of Sustainability, Internal Services Department, and Department of Public Works to help educate departments on environmentally-friendly alternatives to expanded polystyrene food containers and to assist departments with their choices of alternatives.
3. Direct the Internal Services Department, in consultation with County Counsel and the Department of Public Works, to develop and incorporate language in future departmental food services agreements regarding the prohibition on expanded polystyrene food containers and substitution of alternative products, as applicable.

4. Direct the County Office of Sustainability to provide bi annual status reports on the County's green website (<http://green.lacounty.gov>) on the County's progress in eliminating expanded polystyrene food containers from operations for a two-year period.
5. Direct the Department of Public Works and County Counsel to report back, within twelve (12) months of implementing the prohibition on the purchase and use of expanded polystyrene food containers at County operations, on the feasibility of implementing a restriction on the use of expanded polystyrene food containers at food service establishments and retail stores in the County unincorporated areas, including potential recommended changes to the County Code. If determined to be feasible, an implementation plan and schedule will be submitted with the report.
6. Receive and file the October 2008 Department of Public Works report entitled, "An Overview of Expanded Polystyrene Food Containers in Los Angeles County: Part 1 Banning Expanded Polystyrene Food Containers at County Operations" (Enclosure I).
7. Receive and file the October 2009 Responsible Purchasing Network's "Final Report: Expanded Polystyrene Food Containers Alternative Products Analysis and Lifecycle Assessment" and related appendices (Enclosure II).

#### **PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION**

On May 22, 2007, your Board instructed:

1. The Director of Public Works, in consultation with the Director of Internal Services and County Counsel, to investigate the impact of prohibiting the purchase and use of expanded polystyrene (EPS) food containers at all County-owned facilities, County offices, County-managed concessions, County-permitted events, and County-sponsored events, and report back with recommendations on: a) the earliest practical effective date for such prohibition; b) whether there should be a case by case temporary waiver as a result of contractual obligations or if there are no other viable alternatives for specific products; and c) a description of the proposed outreach program to provide information and assistance in identifying environmentally-friendly alternatives to expanded polystyrene food containers.
2. The Director of Public Works, in consultation with County Counsel, to investigate the feasibility of prohibiting the use of expanded polystyrene food containers at all food service establishments and retail stores in the Unincorporated County areas, including recommended changes to the County Code.
3. The County's Legislative Advocates in Sacramento to pursue passage of AB 820 (Karnette) which seeks to ban the selling, possession, or distribution of expanded polystyrene food containers at State facilities, including universities and colleges.
4. The Chief Administrative Officer to update the County's policies and proposals for the 2007-2008 State Legislative Session to pursue legislation which promotes market development and manufacturer stewardship of products made of alternatives to polystyrene.
5. The Director of Public Works to enhance the educational and public outreach campaign to encourage Los Angeles County residents, public agencies, school districts and cities on

environmentally-friendly alternatives to polystyrene.

The primary purpose of this Board letter is to address the first Board instruction, to prohibit the purchase and use of expanded polystyrene (EPS) food containers at all County operations.

As provided in the second Board instruction and fifth recommendation to this Board letter, the Department of Public Works (Public Works), and County Counsel will report back within 12 months with a recommendation based on the outcome of addressing the first Board instruction and a further assessment by the County Working Group, which addresses prohibiting the use of EPS food containers at food service establishments and retail stores in the County unincorporated areas. Evaluating an EPS restriction throughout the unincorporated areas will require public outreach and participation from interested stakeholders as well as coordination with affected businesses and industries. Recommendations, including any proposed modifications to the County Code, will be discussed with affected stakeholders prior to being submitted for Board approval. These recommendations will include a schedule for complying with existing State and federal regulations, including environmental documentation, as applicable.

The third Board instruction regarding pursuing passage of AB 820 was addressed by the Chief Administrative Officer in Item 21 on the May 22, 2007, Board agenda, recommending support of AB 820 (Karnette) - Polystyrene Food Containers. This Bill would have prohibited a State facility from selling, possessing, or distributing EPS food containers after January 1, 2009. State agencies would have been directed to require each prospective contractor to certify that it would not sell, possess, or distribute an EPS food container at a State facility. AB 820 did not pass out of committee. The Chief Executive Office (CEO) continues to seek out similar legislation to support.

The fourth Board instruction regarding legislation which promotes market development and manufacturer stewardship of products made of alternatives to polystyrene was addressed by the CEO in Item 75-B on the June 5, 2007, Board agenda, recommending support of AB 904 (Feuer) – Recycling Food Containers. This Bill would have phased out the use of food packaging that cannot be recycled or composted in communities where it is distributed. AB 904 did not pass out of committee. The CEO continues to seek out similar legislation to support.

The final Board instruction regarding outreach and education, is currently being implemented on an on-going basis by Public Works through the Single-Use Bag Reduction and Recycling Program's Working Group outreach efforts. The County Working Group includes representatives from the five Board offices, the CEO, Public Works, Internal Services (ISD), and Public Health, the County Sanitation Districts, and various stakeholder groups.

#### Independent Food Container Alternatives Analysis

In response to the first item in the May 2007 Board motion, which directed Public Works to investigate the impact of prohibiting the County's purchase and use of food containers made from EPS, Public Works prepared "An Overview of Expanded Polystyrene Food Containers in Los Angeles County: Part 1 Banning Expanded Polystyrene Food Containers at County Operations" (Enclosure I), and determined that EPS food containers have a disproportionate impact on the environment and quality of life in the County of Los Angeles compared with alternative products. In response to industry comments and to further quantify the operational impacts to the County of the proposed prohibition, the County retained the Responsible Purchasing Network (RPN) in December 2008 to independently verify baseline consumption of EPS food containers at all County operations,

identify alternative products, and conduct lifecycle environmental assessments comparing EPS and alternative products.

The independent analysis conducted by RPN confirmed Public Works' recommended hierarchy of preferred food containers, beginning with the most preferable as follows: reusable, compostable, recyclable, and other plastic alternatives. This hierarchy is based on the entire lifecycle of the products studied and, therefore, as noted by RPN, selection of a particular product should take into consideration how the food container will be disposed of or managed at the end of its useful life. For example, while compostable products are generally preferred over recyclable products, compostable food containers should be used in conjunction with implementing the necessary infrastructure for composting those products. That is, products capable of being diverted from the waste stream are preferred over products that must be disposed of after a single use, but if such products are likely to be disposed of rather than diverted, they will be ranked at the bottom of the hierarchy when purchasing decisions are made. Further, in some cases, if a department has the capability of recycling EPS products, they may be preferred over alternative products that would be destined for a landfill after a single use.

As detailed in the Public Works report (Enclosure I) and RPN's Final Report (Enclosure II), when reused, composted or recycled appropriately, alternative products may result in the following environmental benefits as compared to EPS products:

- Lower greenhouse gas (GHG) emissions over their lifetime compared to EPS. Some alternative products are produced from naturally occurring carbon sources, which are not considered to increase GHG emissions because the carbon returns to plant material in a relatively short cycle. Alternative products may also be produced from materials that would otherwise be considered waste, and, therefore, no additional GHG emissions result from their production. In addition, the lifecycle analysis performed by RPN determined that recyclable single-use alternative products have lower GHG emissions than EPS products.
- Reduced and less persistent impact on the natural environment and wildlife when compared to EPS products. Expanded polystyrene products cannot be composted, and may take hundreds of years to deteriorate in the natural environment. Compostable alternative products are expected to decompose in as little as a few weeks if composted, or as long as a few months in the natural environment. All certified compostable containers must be able to biodegrade completely within approximately six months when properly composted.
- Reduced health concerns for animals and humans. Expanded polystyrene products, in contrast to alternative products, have been found to release hazardous chemicals as they break down in the natural environment.

For the above reasons, the RPN report recommends that, when reusable products are not feasible, County operations convert to certified compostable or recyclable products from paper, bagasse and other agricultural waste products, or Polylactic Acid (PLA). Based on their analysis, RPN has made recommendations to the County on food container purchases, use, and end-of-life management (see Enclosure II). RPN's recommendations were incorporated into ISD's purchasing policy as discussed below.

Based on Public Works' staff report as confirmed by RPN's report, and following discussions with affected and interested stakeholders, the County Working Group established the recommendations to your Board outlined above to phase out and replace the use of EPS food containers at County

operations while investigating a prohibition at food service establishments and retail stores.

In order to support the County's implementation of the prohibition on EPS food containers, ISD updated Policy No. P-1050, Purchase of Environmentally Preferable Products, to incorporate the alternative product hierarchy and include a food and beverage container component with emphasis on the procurement of alternative products based on the work completed by RPN, effective October 7, 2009, (Enclosure IV).

It can be seen from the foregoing that there is no single "best" alternative product for all County operations. Each department's purchasing decisions must be based on many factors specific to its operations. Public Works and ISD have shared the RPN report with County departments so that they can begin to plan appropriately as your Board considers prohibiting EPS food container products in County operations. Also, Public Works and ISD will provide technical guidance as needed to assist County departments in identifying the most appropriate alternatives to facilitate compliance with the EPS prohibition within 60 days of adoption of the Board's recommendation. If applicable, departments will continue to deplete their remaining stock of EPS food containers while preparing to fully comply with the proposed prohibition.

#### Departments' Readiness to Use Alternative Food Containers

Enclosure VI contains a chart that indicates the County departments that are the major users of EPS food containers. The Department of Parks and Recreation will be able to comply with the proposed requirement to use food containers made from alternative materials no later than June 2011, to ensure all relevant information is added to event materials. The Department of Beaches and Harbors will be able to require its concessionaires and the Gladstone's 4 Fish restaurant operator to comply within the recommended 60-day transition period, but will need additional time to transition its beach use permittees to alternative materials, because enabling language needs to be incorporated into the online beach use permit application and permits already entered into without this language extend out to the end of the year. The Departments of Community and Senior Services, Health Services, Probation, and CEO will require additional time to transition to alternative materials due to existing contract provisions that cannot be amended. It is recommended that these departments be allowed to coordinate their transition to alternative products with their solicitations for successor food services agreements. Specific transition dates for each department are identified in Enclosure VI, which also summarizes the efforts by these departments to reduce usage of EPS products and/or promote recycling of EPS products. Additional details for each department are provided in Enclosure III.

The Sheriff has been working with ISD, Public Works, and the CEO to retain a vendor to recycle their used EPS food containers. We anticipate that a contract could be operational by December 1, 2010, following procurement, installation, and testing of additional equipment to satisfy contract requirements. If successful, and if the vendor is able to handle the volume of material generated, such an effort could be implemented at other departments under certain conditions. If not successful, the Sheriff will purchase alternative single-use food containers.

#### **Implementation of Strategic Plan Goals**

County Strategic Plan, Goal 1, Strategy 3, directs the County departments to attain operational effectiveness by implementing environmentally responsible practices to reduce the County's "Carbon Footprint" and promote environmental stewardship. The recommended action will help meet these

goals by coordinating departmental resources effectively to implement environmentally beneficial programs within County operations.

### **FISCAL IMPACT/FINANCING**

As part of the task of identifying alternative products, RPN provided a list of priority replacement products and their suppliers, and cost averages of the products. The three County departments that utilize significant quantities of EPS food containers are Health Services, Community and Senior Services, and Probation. The only County department that determined that there would be an increase in net County cost was Probation. In determining the cost increase to Probation, the lowest identified unit price per container type was used to estimate the cost of the alternative products. Probation utilizes approximately 4.9 million EPS containers annually at four of their facilities at a current net County cost (NCC) of \$176,000. Probation estimates that alternative products would cost approximately \$370,000 annually, an increase of \$194,000 in NCC which is a 110 percent increase over the current EPS purchased products. Departments indicated that they will absorb the additional costs. In the case of Health Services and Community and Senior Services (CSS), the additional costs, would be absorbed by the contractors resulting in no budgetary impact. However, CSS indicated that there could potentially be a service reduction.

Public vendor contracts for Health Services and Community and Senior Services, and for County facilities, such as the CEO managed Kenneth Hahn Hall of Administration contract, would not incur the cost of alternative products purchased, since any increase in product cost would be managed by the contractors or passed on to customers. The same premise would presumably hold true for food products or services that park and beach patrons purchase from contract vendors.

The Sheriff's Department is not included in the table above since the recycling contract discussed in Enclosure III would not result in any additional costs to the department. Due to varying usage and negotiations with different vendors, the current cost for food containers at the Sheriff's Department is low compared to other departments. Therefore, there is a larger estimated increase for the Sheriff's Department to transition to purchasing alternatives, if that becomes necessary. If the EPS recycling contract is not implemented as anticipated, the fiscal impact of switching to alternative products for the Sheriff's Department would be an increase in NCC of \$206,000 annually based on use of 4.6 million containers. Currently cost of \$82,000 would increase to \$288,000 to utilize non-EPS products, which represents a 251 percent cost increase.

### **FACTS AND PROVISIONS/LEGAL REQUIREMENTS**

None of the recommended actions shall be interpreted or applied as to create any requirement, power or duty in conflict with any federal or State law. Recommendation 2 will direct ISD to work in consultation with County Counsel and Public Works to develop and incorporate language regarding the new prohibition in future County food services agreements, as applicable.

### **ENVIRONMENTAL DOCUMENTATION**

The proposed actions to restrict EPS food containers at County operations are not subject to the California Environmental Quality Act (CEQA) since the actions involve continuing administrative or

maintenance activities, such as purchasing supplies and development of general policies and procedures and, therefore, do not meet the definition of a project according to Section 15378 (b) (2) of the State CEQA Guidelines. The proposed action to study the feasibility of prohibiting the use of EPS food containers at food service establishments and retail stores in the unincorporated areas is statutorily exempt from CEQA pursuant to Section 15262 of the State CEQA Guidelines. Necessary environmental review will be completed prior to adoption of any action that constitutes a project under CEQA.

### **IMPACT ON CURRENT SERVICES (OR PROJECTS)**

Board approval of the recommended actions will restrict the use of EPS food containers at County operations and provide a framework for assessing the feasibility of expanding this action to all food service establishments and retail stores in the County unincorporated areas. Restricting the use of EPS products and promoting environmentally friendly alternatives would also raise environmental awareness, assist the County in meeting the Federal Clean Water Act requirements, enhance the County's image as a leader in the area of environmental stewardship, and improve the quality of life for residents in the County.

### **CONCLUSION**

Please return one adopted stamped copy of this letter to the Chief Executive Office, Public Works, Internal Services, and County Counsel.

Respectfully submitted,



GAIL FARBBER  
Director

GF:td

Enclosures

c: All County Departments

# **An Overview of Expanded Polystyrene Food Containers in Los Angeles County**

## **PART ONE**

### **Tracking Expanded Polystyrene Food Containers at County Operations**

A STAFF REPORT TO THE LOS ANGELES COUNTY BOARD OF SUPERVISORS



*"To Enrich Lives Through Effective and Caring Service"*

C O U N T Y   O F   L O S   A N G E L E S

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**County's Working Group**

All Supervisorial Districts  
Chief Executive Office  
Department of Public Works  
Internal Services Department  
Department of Public Health  
County Counsel  
County Sanitation Districts of Los Angeles County

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## **Preface**

### **Report Mandate**

On May 22, 2007, the Los Angeles County Board of Supervisors approved the following actions related to the use of expanded polystyrene food containers:

1. Instruct the Director of Public Works, in consultation with the Director of Internal Services and County Counsel, to investigate the impact of prohibiting the purchase and use of expanded polystyrene food containers at all County-owned facilities, County offices, County-managed concessions, County-permitted events, and County-sponsored events, and report back with recommendations, including:
  - a) A recommendation on the earliest practical effective date for such prohibition;
  - b) A recommendation on whether there should be a case-by-case temporary waiver as a result of contractual obligations or if there are no other viable alternatives for specific products; and
  - c) A description of the proposed outreach program to provide information and assistance in identifying environmentally friendly alternatives to expanded polystyrene food containers;
2. Instruct the Director of Public Works, in consultation with County Counsel, to investigate and report back in six months on the feasibility of prohibiting the use of expanded polystyrene food containers at all food service establishments and retail stores in the unincorporated County areas, including recommended changes to the County Code;
3. Instruct the County's Legislative Advocates in Sacramento to pursue passage of AB 820 (Karnette) which seeks to ban the selling, possession, or distribution of expanded polystyrene food containers at State facilities, including universities and colleges;
4. Instruct the Chief Executive Office to update the County's policies and proposals for the 2007-2008 State Legislative Session to pursue legislation which promotes market development and manufacturer stewardship of products made of alternatives to polystyrene; and
5. Instruct the Director of Public Works to enhance the educational and public outreach campaigns to encourage Los Angeles County residents, public agencies, school districts and Cities on environmentally-friendly alternatives to polystyrene.

This Part I report highlights staff findings in response to Item 1 above: prohibiting the purchase and use of expanded polystyrene food containers at all County operated facilities. As reported to the Board of Supervisors in 2007, the timing and implementation of Part II (Item 2 above) will rely upon the findings of this report and implementation of its recommendations, if approved. Items 3, 4 and 5 have been completed.

## Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>1</b>
BACKGROUND .....	1
<i>Need to Reduce Expanded Polystyrene Litter</i> .....	1
KEY FINDINGS .....	2
<b>CHAPTER 1 INTRODUCTION AND METHODOLOGY .....</b>	<b>5</b>
INTRODUCTION .....	5
<i>Description of Motion</i> .....	5
<i>Current Disposal Conditions</i> .....	6
METHODOLOGY USED .....	6
<b>CHAPTER 2 OVERVIEW OF EXPANDED POLYSTYRENE .....</b>	<b>7</b>
OVERVIEW .....	7
HISTORY OF EXPANDED POLYSTYRENE (EPS) .....	7
HOW IS EPS MANUFACTURED? .....	8
HOW IS EPS RECYCLED? .....	8
EPS USAGE INFORMATION .....	9
DO COUNTY DEPARTMENTS USE EPS FOOD CONTAINERS? .....	10
HOW IS EPS MANAGED IN LOS ANGELES COUNTY JURISDICTIONS? .....	12
LEGISLATIVE INFORMATION .....	12
<b>CHAPTER 3 LITTER AND ENVIRONMENTAL IMPACT .....</b>	<b>14</b>
LITTER IMPACT .....	14
<i>Litter Impact on Local Waterways and Beaches</i> .....	16
FINANCIAL IMPACT .....	19
<i>County of Los Angeles' Litter Cleanup/Prevention Costs</i> .....	19
<i>Zero Trash TMDL</i> .....	20
ECOSYSTEM IMPACTS FROM LITTERED EXPANDED POLYSTYRENE FOOD CONTAINERS .....	21
ANTI-LITTERING LAW .....	23
<b>CHAPTER 4 ALTERNATIVE PRODUCTS ASSESSMENT .....</b>	<b>24</b>
LIST OF CURRENT ALTERNATIVE PRODUCTS .....	24
ASSESSMENT OF RELATIVE IMPACTS .....	25
PRODUCT TYPES .....	26
<i>Reusable Products</i> .....	27
<i>Compostable/Biodegradable Products</i> .....	27
<i>Recyclable Products</i> .....	28
ISSUES IMPACTING ALTERNATIVES ASSESSMENT .....	28
<i>Sustainability</i> .....	28
<i>Single-Use Disposal</i> .....	28
<i>Biodegradability/Composting</i> .....	29
<i>Recycling</i> .....	29
<b>CHAPTER 5 MUNICIPAL BANS – CASE STUDIES .....</b>	<b>30</b>
CITY OF ALISO VIEJO .....	30
CITY OF BERKELEY .....	30
CITY OF CALABASAS .....	30
CITY OF CAPITOLA .....	30
CITY OF EMERYVILLE .....	31
CITY OF HUNTINGTON BEACH .....	31

CITY OF MALIBU .....	31
CITY OF OAKLAND .....	31
CITY OF PORTLAND, OREGON.....	31
CITY OF RANCHO CUCAMONGA .....	32
CITY OF SAN CLEMENTE .....	32
CITY/COUNTY OF SAN FRANCISCO.....	32
CITY OF SANTA MONICA .....	32
COUNTY OF VENTURA.....	32

**CHAPTER 6 FINDINGS AND RECOMMENDATIONS..... 33**

KEY FINDINGS.....	33
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**APPENDICES**

- A) GUIDANCE MATRIX
- B) LIST OF VENDORS
- C) ISD PURCHASING POLICY
- D) COUNTY DEPARTMENT SURVEY RESULTS
- E) PLASTIC RECYCLING CHART
- F) SAMPLE BROCHURES

## List of Figures

FIGURE 1 – EXPANDED POLYSTYRENE CUPS AND OTHER PLASTIC TRASH CAPTURED IN THE LOS ANGELES RIVER DEBRIS NET .....	2
FIGURE 2 – HIERARCHY OF PREFERRED ALTERNATIVES FOR PROCUREMENT.....	4
FIGURE 3 – TYPICAL VIEW OF SOURCE-SEPARATED RECYCLABLES TRAVELING ALONG A SORTING CONVEYOR BELT AT A RECYCLING FACILITY.....	9
FIGURE 4 – EPS FOOD CONTAINERS CAUGHT IN FENCE .....	15
FIGURE 5 – SANITIZER MACHINE CLEANING VENICE BEACH .....	18
FIGURE 6 – EPS FRAGMENT NOT COLLECTED BY THE SANITIZER BEACH CLEANING MACHINE AT VENICE BEACH .....	18
FIGURE 7 - END-OF-PIPE NET AT HAMILTON BOWL .....	19
FIGURE 8 – EPS CAUGHT IN-STREAM FLOATING NET .....	20
FIGURE 9 – POLYSTYRENE IN THE RIVER.....	21
FIGURE 10 – EGRET LOOKS FOR FOOD AMONG EPS AND OTHER TRASH.....	22
FIGURE 11 – HIERARCHY OF PREFERRED ALTERNATIVES FOR PROCUREMENT.....	36

## List of Tables

TABLE 1 – EXPANDED POLYSTYRENE USAGE STATISTICS.....	9
TABLE 2 -- USE OF EPS FOOD CONTAINERS BY COUNTY DEPARTMENT .....	10
TABLE 3 -- SUMMARY OF LITTER STUDIES .....	16
TABLE 4 – TYPES OF ALTERNATIVES TO EPS .....	25
TABLE 5 – PRODUCT IMPACT MATRIX .....	26

## EXECUTIVE SUMMARY

### Background

This report is in response to a motion by the Los Angeles County Board of Supervisors to investigate the impact of prohibiting the purchase and use of expanded polystyrene (EPS) food containers at all County-owned facilities, County offices, County-managed concessions, and County-permitted and sponsored events. This report summarizes the impacts of EPS food containers and the options available to transition County operations to more environmentally friendly alternatives. The Board has elected to make County offices the first to act in order to demonstrate leadership on this critical issue.

### *Need to Reduce Expanded Polystyrene Litter*

The properties of EPS make it an inexpensive and effective material for product packaging and food/beverage containers. As a result, 56,000 tons of EPS products (primarily product packaging and food containers), equivalent in volume to over eight Empire State Buildings, enter the marketplace in California annually, with the overwhelming majority either disposed or littered.<sup>1</sup> Once littered, EPS food containers are easily blown into our storm drain system. Their lightweight characteristic enables them to be readily carried downstream into our waterways, negatively impacting the environment and wildlife. They also end up entangled in brush, tossed along freeways, and washed up on our beaches. Because EPS crumbles and is often difficult to collect, it is a greater eyesore and nuisance than other littered materials. This littering also impacts recreational areas and the quality of life for residents in Los Angeles County.

Public agencies collectively spend tens of millions of dollars annually on litter prevention, cleanup, and enforcement activities. The litter collected includes EPS food containers that are most often white and highly buoyant. EPS containers are often seen floating in gutters, rivers, and creeks following rain events, clearly standing out among other debris. Several litter studies have found EPS to make up the majority of particles in the total litter stream.<sup>2</sup> A 1998 study in Orange County, California, quantified the composition of beach debris and found that foamed plastics comprise 43 percent of materials collected.<sup>3</sup> The cost to local governments is expected to dramatically rise over the next few years due to compliance with requirements under the Federal Clean Water Act. Currently, the County of Los Angeles Department of Public Works (DPW) and the

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<sup>1</sup> "Use and Disposal of Polystyrene in California," California Integrated Waste Management Board 2004, <http://www.ciwmb.ca.gov/Publications/Plastics/43204003.doc>

<sup>2</sup> Working Our Way Upstream: A Snapshot of Land-Based Contributions of Plastic and Other Trash to Coastal Waters and Beaches of Southern California - C.J. Moore, G.L. Lattin, A.F. Zellers, Algalita Marine Research Foundation  
[http://conference.plasticdebris.org/whitepapers/CJ\\_Moore\\_Working\\_Our\\_Way\\_Upstream.doc](http://conference.plasticdebris.org/whitepapers/CJ_Moore_Working_Our_Way_Upstream.doc)

<sup>3</sup> Moore, S.L., D. Gregorio, M. Carreon, S.B. Weisberg and M.K. Leecaster. – 2001. Composition and distribution of beach debris in Orange County, California. Mar. Pollut. Bull., 42(3): 241-245., The percentage is calculated outside of pre-production pellets, which do not originate from consumer or residential sources.

Flood Control District (FCD) spend approximately \$18 million per year on clean-up activities such as street sweeping, catch basin cleanouts, cleanup programs, and litter prevention and education efforts.



**Figure 1 – Expanded Polystyrene Cups And Other Plastic Trash Captured In The Los Angeles River Debris Net**

## **Key Findings**

Findings in the report are based on two components, the first involving research findings related to environmental factors and the second involving findings based on questionnaire responses received from County departments and agencies. (Appendix D)

*Findings based on environmental factors:*

- Reducing the use of EPS food containers would result in a benefit to the environment by reducing litter, and in turn, reducing the negative impact on the marine environment and other wildlife. This reduced litter would also lead to a decrease in cleanup costs.
- Replacing EPS products with reusable and durable goods, where applicable, would have the highest positive impact on the environment.

- Developing a policy restricting the use of EPS products and promoting environmentally friendly alternatives would boost other environmental initiatives and raise environmental awareness.

*Findings based on County questionnaire responses:*

- Prohibiting the purchase and use of EPS food containers at all County-owned facilities, County offices, County-managed concessions, County-permitted and County-sponsored events would be feasible to a great extent since use of EPS by County departments is relatively moderate and several County departments already use alternative products to some extent.
- In comparison to EPS food containers, comparable alternative products may be significantly more expensive to purchase, depending on the nature of the material used, manufacturing process, and the durability of the product. However due to the diversity of readily available alternatives, some of which are comparable in cost to EPS, the vast majority of County Departments can comply with this restriction with little or no impact on their overall budgets, of which food container purchases are only a small component. For other Departments where health, safety and/or security may require a specific type of alternative product in lieu of EPS food containers, the transition to an alternate product may not be feasible for the foreseeable future based on the significant cost involved.
- Utilizing alternative products is a viable option for departments and agencies provided that additional funding is available. It is expected that Departments will be able to make the necessary adjustment in future year budgets. If this is not possible, Departments will need to apply for a waiver.

**Recommendation for Consideration by the Board of Supervisors:**

Since EPS food containers contribute disproportionately to the litter and environmental problems within the County of Los Angeles, the County working group recommends phasing out the purchase and use of EPS food containers and encouraging the use of environmentally preferable alternatives within all County operations. The following Board action would facilitate implementation of this recommendation:

Adopt a restriction on the purchase and use of all EPS food containers, beginning July 1, 2009, at County-owned facilities, County offices, County-managed concessions, County-permitted events, and County-sponsored events.

Further, authorize the County's Energy and Environmental Team (Team) to grant a waiver under the following circumstances:

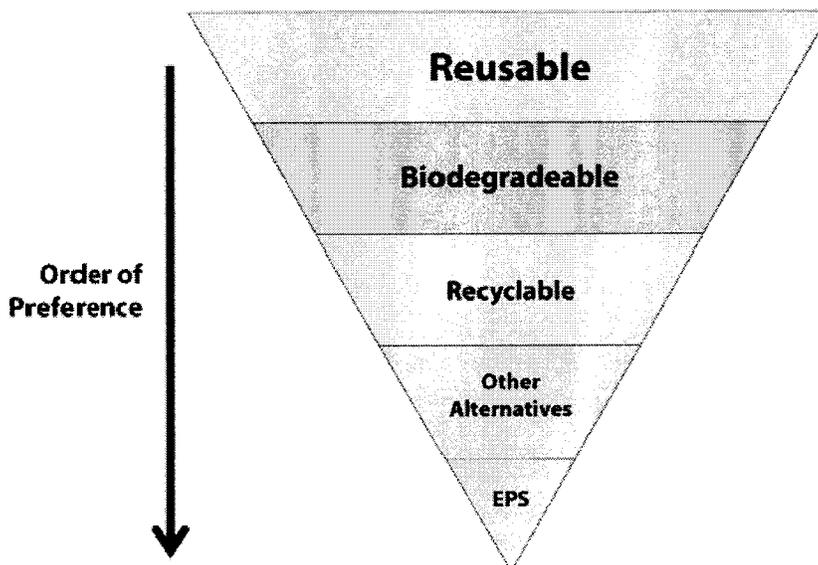
- Health and/or safety operational issues are demonstrated;
- Existing contract requirements stipulate the purchase of EPS products and the contract cannot be amended; and/or
- A County facility incorporates full containment and collection of all EPS food containers generated on site, for the purposes of recycling those containers.

Note: County agencies requiring a waiver must submit a request to the Team specifying the reason(s) a temporary waiver is needed. The Team, in consultation with ISD and Public Works, will make a determination regarding requests on a case by case basis.

In consultation with ISD and Public Works, the Team will provide semi-annual progress reports for a three-year period describing the progress and efforts to phase-out the use of EPS food containers at County operations, including a summary of approved waivers. The Team will also notify Departments of the new policy and provide training on environmentally-friendly alternatives to EPS food containers.

ISD will update the existing Countywide Purchasing Policy for the Purchase of Environmentally Preferable (Green) Products, Policy No. P-1050 (Appendix C), to include an EPS food and beverage container component with specific emphasis on the following hierarchy for procurement of alternative products, as shown in Figure 2 below:

- a. Reusable and durable goods
- b. Biodegradable single-use products, including paper-based single-use products with no petroleum coating
- c. Recyclable single-use products
- d. Other non-EPS products
- e. EPS products, for those cases where a waiver is approved



**Figure 2 – Hierarchy of Preferred Alternatives for Procurement**

In consultation with ISD and DPW, the CEO will retain a consultant to initiate product alternative and guideline study for County purchase agreements for vendors who provide alternative products based on the hierarchy cited in Figure 2 above. The consultant will then develop an EPS training program and train County departments.

## CHAPTER 1

### INTRODUCTION AND METHODOLOGY

#### Introduction

On May 22, 2007, the Los Angeles County Board of Supervisors approved the following actions related to the use of expanded polystyrene food containers:

1. Instruct the Director of Public Works, in consultation with the Director of Internal Services and County Counsel, to investigate the impact of prohibiting the purchase and use of expanded polystyrene food containers at all County-owned facilities, County offices, County-managed concessions, County-permitted events, and County-sponsored events, and report back with recommendations, including:
  - a. A recommendation on the earliest practical effective date for such prohibition;
  - b. A recommendation on whether there should be a case-by-case temporary waiver as a result of contractual obligations or if there are no other viable alternatives for specific products; and
  - c. A description of the proposed outreach program to provide information and assistance in identifying environmentally friendly alternatives to expanded polystyrene food containers;
2. Instruct the Director of Public Works, in consultation with County Counsel, to investigate and report back in six months on the feasibility of prohibiting the use of expanded polystyrene food containers at all food service establishments and retail stores in the Unincorporated County Areas, including recommended changes to the County Code;
3. Instruct the County's Legislative Advocates in Sacramento to pursue passage of AB 820 (Karnette) which seeks to ban the selling, possession, or distribution of expanded polystyrene food containers at State facilities, including universities and colleges;
4. Instruct the Chief Administrative Officer to update the County's policies and proposals for the 2007-2008 State Legislative Session to pursue legislation which promotes market development and manufacturer stewardship of products made of alternatives to polystyrene; and
5. Instruct the Director of Public Works to enhance the educational and public outreach campaign to encourage Los Angeles County residents, public agencies, school districts and Cities on environmentally-friendly alternatives to polystyrene.

This Part 1 report highlights staff findings in response to Item 1 above. The timing and implementation of Part II (Item 2 above) will rely upon the findings of this report and implementation of its recommendations, as reported to the Board of Supervisors in 2007. Items 3, 4, and 5 have been completed.

### Current Disposal Conditions

Los Angeles County has the most extensive and complex solid waste system in the nation. It covers an area of approximately 4,084 square miles and encompasses 88 cities and 140 unincorporated communities.<sup>4</sup> One in three Californian's live in Los Angeles County, which has a population of 10.2 million people. Los Angeles County is the most populous county in the nation, having a larger population than 42 states and 162 countries.<sup>5</sup> The County's population is expected to increase to approximately 11 million people by 2020.<sup>6</sup> If it were a country, Los Angeles County would rank 17<sup>th</sup> in the world in terms of Gross Domestic Product.<sup>7</sup> This vigorous population growth, coupled with comparable increases in economic activity, will have a major impact on the solid waste management infrastructure in Los Angeles County.

In 1989, the California Legislature passed the California Integrated Waste Management Act (Assembly Bill 939). Assembly Bill 939 requires every city and county to divert 50 percent of all solid waste generated from landfill disposal or face a fine of up to \$10,000 per day. Counties have the added responsibility of assuring adequate disposal capacity for the residual trash that remains after recycling for a 15-year planning period.

Since 1990, numerous programs have been implemented at the city and County levels, including curbside recycling, construction and demolition waste recycling, and business recycling enhancement programs. In addition, the County has implemented countywide recycling programs to assist jurisdictions in complying with Assembly Bill 939, such as the Countywide Household Hazardous/Electronic Waste Management Program, the Waste Tire Collection Program, and the Smart Gardening Program.

### **Methodology Used**

Published studies were reviewed and analyzed to comprehensively assess the operational, environmental and fiscal impacts of EPS. In addition, surveys of major food vendors, solid waste facilities, Caltrans, cities, and County departments were conducted to gather information on prevailing recycling, cleanup methods, litter characterizations, and costs. Several public and environmental interest groups, industry, and manufacturing trade organizations were also consulted regarding EPS consumption data, management options, litter impacts, and cleanup efforts. Finally, a questionnaire was provided to County departments and agencies to assess current County practices and determine the viability of eliminating the purchase and use of EPS food containers as called for in the Board motion.

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<sup>4</sup> County of Los Angeles Statistical Data, [http://lacounty.info/statistical\\_information.htm](http://lacounty.info/statistical_information.htm), December 13, 2007

<sup>5</sup> Los Angeles County Economic Development Corporation, Los Angeles County Profile, May 2006.

<sup>6</sup> Los Angeles County Economic Development Corporation, L.A. Stats, June 2006.

<sup>7</sup> County of Los Angeles Annual Report 2006-2007, <http://lacounty.info/miscellany.pdf>, (December 18, 2007).

## CHAPTER 2

### OVERVIEW OF EXPANDED POLYSTYRENE

#### Overview

Polystyrene, the polymer used to create EPS, was developed in 1938. EPS products were produced after 1944 and used as packaging material. After fast food and take-out restaurants became more commonplace in the 1950's and 1960's, EPS food packaging containers became more prevalent.

#### History of Expanded Polystyrene (EPS)

- 1944: EPS first used as packaging material.
- 1960's: Fast food restaurants begin using EPS for food containers.
- 1987: City of Berkeley, CA bans the use of EPS food containers at restaurants and other retail food establishments.
- 1988: Suffolk County, NY bans the use of EPS for food containers in restaurants and other retail food establishments.
- 1989 The U.S. Department of Interior banned EPS food containers at its Washington, DC headquarters.
- 1990: McDonald's begins to phase out EPS food containers nationwide.
- 2004: The California Integrated Waste Management Board issues a report which finds that public education efforts need to be improved to deliver a consistent litter message, litter studies are needed to determine how to best handle the litter problem, and biodegradable alternatives to EPS containers need to be tested.
- 2005: City of Malibu bans the use of polystyrene food containers (Type #6 plastic, which includes EPS) citywide.
- 2006: City of Santa Monica bans the use of polystyrene food containers (Type #6 plastic, which includes EPS) citywide. Ordinance took effect February 2008.
- 2007: City of Calabasas bans the use of polystyrene food containers (Type #6 plastic, which includes EPS) citywide. Ordinance took effect March 2008.

## How Is EPS Manufactured?

Plastic resin is created from long chemical chains called polymers, commonly extracted from petroleum and natural gas processing. The main polymer used, styrene, is treated with a polymerization indicator to convert it to polystyrene. Once the polymer chain is at the correct length, terminating agents are introduced to stop the reaction. The results are a chain of beads which are cleaned. The beads are melted down and a blowing agent is added to extrude the beads, which are reheated, expanded, and cooled. After cooling, the beads are fed into a mold of the desired shape.

## How is EPS Recycled?

A survey of waste haulers and materials recovery facilities (MRFs) found that the overwhelming majority of haulers and facilities do not accept EPS food containers from curbside recycling. MRFs separate materials delivered using a variety of mechanical and manual sorting systems. Their main objective is to maximize diversion of recyclables from the waste stream, while reducing cost and maximizing revenue from those materials targeted for recovery. The most commonly recovered materials include some plastic containers, paper, aluminum cans, and cardboard because they are easy to collect, have an available market, and provide the most revenue without costly specialized sorting machinery. Interviews and site visits of these recovery and recycling facilities revealed that EPS product packaging is targeted for recovery; however, EPS food containers are not targeted for recovery, but instead taken to landfills for the following reasons:

- EPS *food containers* have high contamination rates from food and may contaminate other recyclables as well. Additionally, EPS *food containers* are contaminated when they come into contact with items in the recycling collection bin. EPS *food containers* that are contaminated cannot be efficiently recycled.
- EPS *food containers* are smaller than EPS product packaging (e.g., for TVs, stereos, etc.), and tend to break up into smaller pieces when handled by machinery, making collection of EPS challenging.
- It is not currently cost efficient to recycle EPS *food containers* as the market for this material is weak, largely due to contamination issues coupled with the relative cost to collect, clean, and densify these materials.

The national recycling rate for all EPS products (which includes product packaging and food containers) is only 0.2 percent.<sup>8</sup> Since food containers are even more challenging to collect and recycle, it is assumed that the 0.2 percent recycling rate is mostly due to product packaging and that the recycling rate for food containers is virtually nonexistent. Very recently, a method has been developed for the separate collection and aggregation of source separated EPS food packaging containers for recycling. In order to be successful, EPS users must have significant quantities of uniform EPS food

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<sup>8</sup> "Use and Disposal of Polystyrene in California," California Integrated Waste Management Board, 2004. (<http://www.ciwmb.ca.gov/Publications/Plastics/43204003.doc>). EPS food containers may have a lower overall rate due to additional challenges of collecting and recycling these materials.

packaging containers that can be relatively clean and entirely separated from other materials for collection. In certain applications this system can provide for the collection and recycling of EPS food packaging containers.



**Figure 3 – Typical view of source-separated recyclables traveling along a sorting conveyor belt at a recycling facility**

### **EPS Usage Information**

Below is a table summarizing consumption, disposal and recycling rates of EPS in California. Rates for Los Angeles (countywide and unincorporated) are extrapolated based on population.

**Table 1 – Expanded Polystyrene Usage Statistics**

<b>Annual EPS Consumption Rate</b>	
California	56,637 tons
Countywide	15,858 tons
Unincorporated County area	1,586 tons
<b>Annual Rate of Disposal at Landfills</b>	
California	45,000 tons
Countywide	12,000 tons
Unincorporated County area	1,200 tons
Percentage of Overall Disposal Waste Stream	0.12 percent by weight
<b>Annual Rate of Recycling</b>	

National	0.2 percent <sup>9</sup>

**Do County Departments Use EPS Food Containers?**

In order to determine possible impacts to County departments, DPW distributed a questionnaire in September of 2007 to all County departments assessing current usage of EPS food containers at County operations, including cafeterias and food service provided at County offices. In coordination with the Internal Services Department, usage information was gathered and compiled in Table 2 below. Only seven departments indicated any substantial use of EPS food containers. A complete summary of responses from all departments and a sample questionnaire are included in Appendix D.

**Table 2 -- Use of EPS Food Containers by County Departments and Agencies**

<b>Agricultural Commission/Weights and Measures</b>	<b>No</b>	
<b>Alternate Public Defender</b>	<b>No</b>	
<b>Animal Care and Control</b>	<b>No</b>	
<b>Auditor-Controller</b>	<b>No</b>	
<b>Beaches and Harbors</b>	<b>No</b>	
<b>Board of Supervisors</b>	<b>No</b>	
<b>Chief Executive Office</b>	<b>Yes</b>	500-1,000 units per year
<b>Chief Information Office</b>	<b>No</b>	
<b>Child Support Services</b>	<b>No Response</b>	
<b>Children and Family Services</b>	<b>No</b>	
<b>Commission on Human Relations</b>	<b>Yes</b>	5,000 cups, 2,000 plates per year
<b>Community and Senior Services</b>	<b>Yes</b>	49,000 trays, 24,000 bowls, 47,000 cups per year
<b>Community Development Commission</b>	<b>No</b>	
<b>Consumer Affairs</b>	<b>Minimal</b>	Used for special events only

<sup>9</sup> Ibid. Based on recycling rate of all polystyrene food containers; EPS food containers may have a lower overall rate due to additional challenges of collecting and recycling these materials.

<b>Coroner</b>	<b>No Response</b>	
<b>County Counsel</b>	<b>No</b>	
<b>District Attorney</b>	<b>No Response</b>	
<b>Fire Department</b>	<b>Yes</b>	72,000 cups per year
<b>Health Services</b>	<b>Yes</b>	1.6 million cups per year
<b>Human Resources</b>	<b>No</b>	
<b>Internal Services Department</b>	<b>No</b>	
<b>Mental Health</b>	<b>Minimal</b>	Used to educate consumers on how to cook and prepare meals
<b>Military and Veterans Affairs</b>	<b>No Response</b>	
<b>Museum of Art</b>	<b>No</b>	
<b>Natural History Museum</b>	<b>No</b>	
<b>Office of Affirmative Action Compliance</b>	<b>No</b>	
<b>Office of Public Safety</b>	<b>No</b>	
<b>Office of Small Business</b>	<b>No Response</b>	
<b>Office of the Assessor</b>	<b>Minimal</b>	Used for special events only
<b>Ombudsman</b>	<b>No</b>	Phased out the use of EPS
<b>Parks and Recreation</b>	<b>Yes</b>	Used at concession stands, exact figures unknown
<b>Probation</b>	<b>No</b>	Phased out EPS in mid 2008
<b>Public Defender</b>	<b>No</b>	
<b>Public Health</b>	<b>No Response</b>	
<b>Public Library</b>	<b>No Response</b>	
<b>Public and Social Services</b>	<b>No Response</b>	
<b>Public Works</b>	<b>Minimal</b>	10,000 cups, 3,800 other containers per year. Phases out all EPS food containers Earth Day (April) 2008
<b>Regional Planning</b>	<b>No</b>	
<b>Registrar-Recorder/County Clerk</b>	<b>No</b>	
<b>Sheriff</b>	<b>Yes</b>	65,000 24oz. cups; 4 million 8oz. cups; 100,000 food containers; and 500,000 trays per year

Treasurer & Tax Collector	No	

**How is EPS Managed in Los Angeles County Jurisdictions?**

Out of 88 cities within the County, 19 indicated that they have a curbside EPS collection program. A survey of waste haulers and materials recovery facilities (MRFs) found that the overwhelming majority of haulers and facilities do not accept EPS food containers from curbside recycling. MRFs separate materials delivered using a variety of mechanical and manual sorting systems. Their main objective is to maximize diversion of recyclables from the waste stream, while reducing cost and maximizing revenue from those materials targeted for recovery. The most commonly recovered materials include paper, aluminum cans, cardboard, and certain plastic containers, since these particular materials are easy to collect, have an available market, and provide the most revenue without costly specialized sorting machinery. Interviews and site visits of these recovery and recycling facilities revealed that while in some cases EPS product packaging is targeted for recovery, EPS food containers are not targeted for recovery, but instead primarily disposed, for the following reasons:

- EPS *food containers* have high contamination rates from food and may contaminate other recyclables as well. Additionally, EPS *food containers* are contaminated when they come into contact with items in the recycling collection bin. EPS *food containers* that are contaminated cannot be efficiently recycled at traditional recycling facilities.
- EPS *food containers* are smaller than EPS product packaging (e.g., for TVs, stereos, etc.), and tend to break up into smaller pieces when handled by machinery, making collection of EPS challenging.
- It is not currently cost efficient to recycle EPS *food containers* as the market for this material is weak, largely due to contamination issues coupled with the relative cost to collect, clean, and densify these materials.

The national recycling rate for all EPS products (which includes product packaging and food containers) is only 0.2 percent. Since food containers are even more challenging to collect and recycle, it is assumed that the 0.2 percent recycling rate is mostly due to product packaging and that the recycling rate for food containers is virtually nonexistent. Very recently, a method has been developed for the separate collection and aggregation of source separated EPS food packaging containers for recycling. In order to be successful, EPS users must have significant quantities of uniform EPS food packaging containers that can be relatively clean and entirely separated from other materials for collection. In certain applications this system can provide for the collection and recycling of EPS food packaging containers.

**Legislative Information**

Within the past several years, the State legislature has advanced a handful of bills dealing directly with EPS food containers. These bills have dealt with limiting and

prohibiting the distribution of EPS food containers at State facilities, as well as conducting studies dealing with the potential impacts of EPS. Below is a summary of each bill.

*AB 904 (Feuer) - Amended 1-29-08, Died in Committee*

This bill would prohibit a take-out food establishment from distributing single use food service packaging unless the packaging is either compostable or recyclable. The Board of Supervisors voted to support this bill.

*AB 820 (Karnette) - Amended 4-09-07, Died in Committee*

This bill would prohibit a State facility from selling, possessing, or distributing EPS food containers after January 1, 2009. State agencies would be directed to require each prospective contractor to certify that it will not sell, possess, or distribute an EPS food container at a State facility. The Board of Supervisors voted to support this bill.

*AB 1866 (Karnette) - Amended 5-01-06, Died in Committee*

This bill would prohibit State facilities from selling, possessing or distributing EPS food containers, with certain exemptions.

*SB 1127 (Karnette) - Chaptered 10-01-01*

This bill required the California Integrated Waste Management Board to prepare a study on the use and disposal of EPS in the state and submit a report to the Governor and the Legislature. The report, entitled "Use and Disposal of Polystyrene in California," can be found online at [www.ciwmb.ca.gov/Publications/Plastics/43204003.doc](http://www.ciwmb.ca.gov/Publications/Plastics/43204003.doc).

## CHAPTER 3

### LITTER AND ENVIRONMENTAL IMPACT

#### Litter Impact

The widespread use of EPS in the fast food industry and its propensity to become litter has resulted in large quantities of EPS material entering our streams, rivers, and ocean. These light-weight materials are easily windblown into our storm drain system, and are subsequently carried downstream where they pollute and harm our environment and wildlife. They are frequently entangled in brush, tossed along freeways, and caught on fences. Because EPS food containers persist in the natural environment and are also easily broken into small pieces, they are very challenging to contain or collect, and pose a significant nuisance and source of visual blight compared to other littered materials. They are also easily mistaken for food and end up ingested by wildlife, where they can cause harm in the following unintended ways: clogging the throat, thus choking the animal; artificially filling the stomach so that the animal cannot consume food, depriving them of nutrients; and infecting them with harmful toxins that can poison the animal.<sup>10</sup> This blight impacts the County's recreational areas and the quality of life for residents and visitors.

The unsightly accumulation of EPS food containers is clearly visible in our storm drains and waterways. They are commonly seen floating on the water among other debris. Several litter studies have found that EPS makes up a majority of particles in the total litter stream.<sup>11</sup>

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<sup>10</sup> <http://www.marinedebris.noaa.gov> (December 12, 2007), <http://www.plasticdebris.com> (December 12, 2007), <http://www.algalita.org> (December 12, 2007)

<sup>11</sup> "Working Our Way Upstream: A Snapshot of Land-Based Contributions of Plastic and Other Trash to Coastal Waters and Beaches of Southern California" - C.J. Moore, G.L. Lattin, A.F. Zellers, Algalita Marine Research Foundation  
[http://conference.plasticdebris.org/whitepapers/CJ\\_Moore\\_Working\\_Our\\_Way\\_Upstream.doc](http://conference.plasticdebris.org/whitepapers/CJ_Moore_Working_Our_Way_Upstream.doc) pg 6, Table 5. December 18, 2007.



**Figure 4 – EPS food containers caught in fence**

Public agencies collectively spend tens of millions of dollars annually on litter prevention, cleanup, and enforcement activities to address this litter problem. The litter collected is composed of constituents including EPS food containers. Compounding the situation, the cost to local governments in Los Angeles County is expected to dramatically rise over the next few years in order to comply with the Federal Clean Water Act.

Inevitably, the cost for cleanup is passed on to residents in the form of higher disposal costs and other taxes. In addition, despite the efforts of various cleanup activities and thousands of residents who annually volunteer countless hours in beach, roadside (e.g., Adopt-A-Highway programs), park, and neighborhood cleanups, EPS food container litter remains a significant problem.

Litter Impact on Local Waterways and Beaches

Los Angeles County beaches are a tourist attraction, attracting millions of residents and visitors each year. In 2004, a study of litter in the Los Angeles River conducted by the Algalita Marine Research Foundation found that EPS made up the majority of the total litter stream.<sup>12</sup> A 1998 study quantified the composition of beach debris in Orange County, California, and found that foamed plastics (refers to EPS) comprised 43 percent of materials collected by abundance.<sup>13</sup> Due to its very low weight density, the composition of EPS was found to be only 6 percent by weight of the debris within the study area.<sup>14</sup> Because EPS is significantly less dense (lighter) than other materials, it is typical for this material to show up in much higher volumes or quantities while being a relatively small proportion of the material by weight. Additionally, the results show that EPS food container fragments from the waterways are often carried to local beaches.

Table 3 includes a summary of recent analyses of litter cleanups and the composition of the collected litter with regard to EPS, followed by a short description of each study.

**Table 3 -- Summary of Litter Studies**

Caltrans Litter Management Pilot Study (1998-2000)	33	43		5	15	
City of Los Angeles Characterization of Urban Litter (6/10/2004)	71	79		7	17	
Composition and Distribution of Beach Debris in Orange County, California (1998) <sup>15</sup>	34		81	6		43
Greater Los Angeles River Clean-Up (4/30/2004)		37			3	
"Working Our Way Upstream" (2004-2005) <sup>16</sup>				18		83

<sup>12</sup> Working Our Way Upstream: A Snapshot of Land-Based Contributions of Plastic and Other Trash to Coastal Waters and Beaches of Southern California - C.J. Moore, G.L. Lattin, A.F. Zellers, Algalita Marine Research Foundation [http://conference.plasticdebris.org/whitepapers/CJ\\_Moore\\_Working\\_Our\\_Way\\_Upstream.doc](http://conference.plasticdebris.org/whitepapers/CJ_Moore_Working_Our_Way_Upstream.doc)

<sup>13</sup> Moore, S.L., D. Gregorio, M. Carreon, S.B. Weisberg and M.K. Leecaster. – 2001. Composition and distribution of beach debris in Orange County, California. Mar. Pollut. Bull., 42(3): 241-245., The percentage is calculated outside of pre-production pellets, which do not originate from consumer or residential sources.

<sup>14</sup> Ibid.

<sup>15</sup> Ibid.

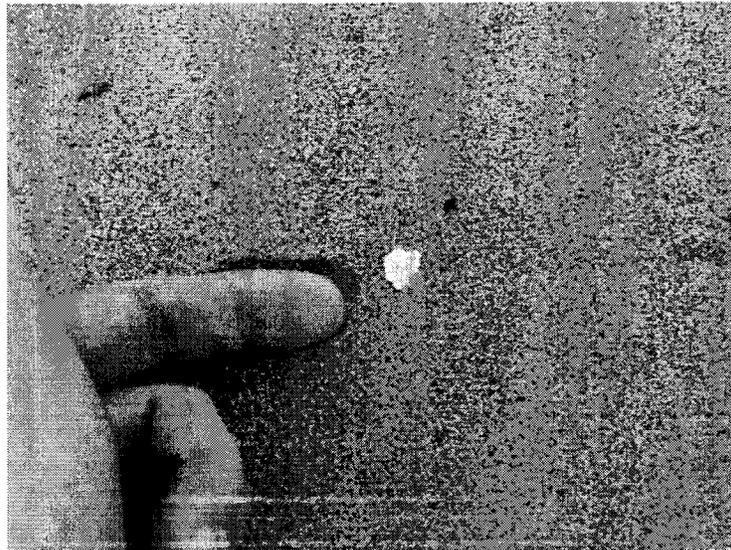
<sup>16</sup> "Working Our Way Upstream: A Snapshot of Land-Based Contributions of Plastic and Other Trash to Coastal Waters and Beaches of Southern California" - C.J. Moore, G.L. Lattin, A.F. Zellers, Algalita Marine Research Foundation. The percentage is based on the study of the Los Angeles River over 3 sample dates.

- Caltrans Litter Management Pilot Study -- The purpose of the study was to investigate the characteristics of litter in freeway stormwater and the effectiveness of best management practices. The study was conducted from 1998 through 2000 on a freeway in the Los Angeles area. Results showed that EPS was 5 percent by weight of the litter collected and 15 percent by volume.
- City of Los Angeles Characterization of Urban Litter -- On June 10, 2004, litter was cleaned from 30 storm drain catch basins and characterized for plastics and EPS separately, among other litter types. Approximately 60 cubic feet of litter was collected and sorted. Results showed EPS to be 7 percent of litter by weight and 17 percent of total litter by volume.
- Composition and Distribution of Beach Debris in Orange County, California -- The purpose of this study was to quantify the distribution and types of beach debris by sampling 43 stratified random sites on the Orange County coast from August to September 1998. Outside of pre-production pellets, which do not originate from consumer or residential sources, EPS made up 6 percent of the weight and 43 percent of the abundance of the beach debris collected.
- Greater Los Angeles River Clean-Up -- During an April 30, 2004 clean-up event, organized by the Friends of Los Angeles River, a waste characterization study was conducted. Approximately 60 cubic feet of litter was collected and sorted. Results showed plastic film to be 37 percent of the total litter by volume. This percentage does not include moldable plastics, which was a separate category.
- Working Our Way Upstream: A Snapshot of Land-Based Contributions of Plastics and Other Trash to Coastal Waters and Beaches of Southern California, -- Conducted by the Algalita Marine Research Foundation, this study analyzed plastic trash between 1 mm and 5 mm in size as well as plastic trash less than 5 mm from two Southern California Rivers; the Los Angeles River and the San Gabriel River. Based on three sampling dates for the Los Angeles River, the EPS averaged 18 percent of the weight and 83 percent of the abundance of the plastic trash gathered.

Current cleanup equipment is ineffective at collecting EPS fragments from beaches, rivers, and parks due to the tendency of EPS food containers to break apart into smaller pieces. At County beaches, litter is primarily collected using machines that quickly pick up a majority of litter. The two most common machines are called the Rake and the Sanitizer. The Rake uses metal fingers to comb through the sand to pick up litter on the beach; however these metal fingers only pick up larger items and are ineffective at collecting items with a diameter of 0.5 inches (13 mm) or less. The Sanitizer, which is the most common machine utilized, skims the top 2 inches (50 mm) of sand with a large flat blade. The sand and are then screened, sending litter up the screen conveyer to a collection bucket and returning sand to the beach. Although the Sanitizer is effective in collecting items larger than 5 mm (0.2 inches), it cannot collect smaller littered fragments.



**Figure 5 – Sanitizer machine cleaning Venice Beach**



**Figure 6 – EPS fragment not collected by the sanitizer beach cleaning machine at Venice Beach**

Another collection issue is that current machines do not work near the wet sand area, allowing debris in this area to be washed into the ocean. Furthermore, other recreational areas such as parks cannot utilize such machinery, and must pick up littered items manually. The propensity for EPS food containers to break apart makes this task daunting.

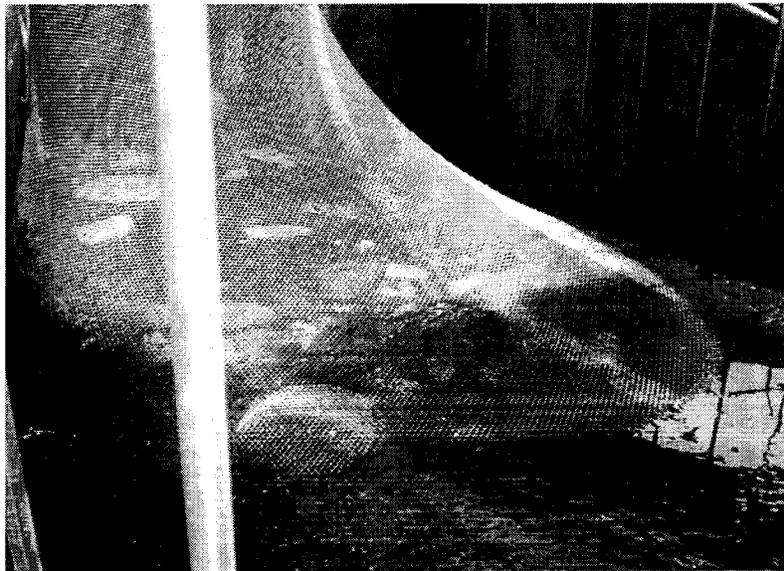
## **Financial Impact**

### *County of Los Angeles' Litter Clean up/Prevention Costs*

The Los Angeles County Department of Public Works (DPW), as the lead County agency responsible for implementing litter reduction and education programs, implements a variety of programs to reduce the impact of litter on our communities. This includes litter collection along roadways, street sweeping, emptying public trash containers, catch basin cleanouts, flood control channel cleanups, stormwater pollution prevention activities, capital improvement projects, implementing best management practices, and implementing public education and outreach activities. The County of Los Angeles and the Flood Control District (FCD) spend approximately \$18 million per year to carryout these responsibilities.

In order to maintain the integrity of the County storm drain system and meet National Pollutant Discharge Elimination System (NPDES) permit requirements, DPW cleans out litter from 78,000 catch basins and additional city-owned catch basins at least once a year. Catch basins that collect considerable litter are cleaned up to three additional times a year. Over 644 tons of litter were removed from County and city catch basins in the 2005-2006 storm season.

DPW also installs and maintains numerous devices that remove litter from the storm drain system. These include 1,026 catch basin inserts and 1,826 curb inlet catch basin retractable screens, 61 "full capture" hydrodynamic separators, 4 end-of-pipe screens, and 21 in-stream floating booms or nets. In addition, the County has contracts for services to clean out trash and debris from channel inverters and rights-of-way.



**Figure 7 - End-of-pipe net at Hamilton Bowl**

### Zero Trash TMDL

The FCD, the County of Los Angeles, and cities within the County are required by their NPDES permits to prevent discharges into its rivers, lakes, and ocean. In addition, the Regional Water Quality Control Board (RWQCB) has imposed total maximum daily loads (TMDL) for what can enter these water bodies. Therefore, the County must implement best management practices to meet these TMDL requirements. The County has for years implemented and maintained numerous best management practices to prevent littering and to remove the litter from its right-of-way and its storm drain system.

Recently, the RWQCB established a zero trash TMDL for the Ballona Creek and Los Angeles River watersheds. These TMDLs require a 10 percent annual reduction of trash entering the water body until zero trash is reached. The zero trash TMDL for both watersheds is to be reached in 2014. These TMDLs not only affect the County of Los Angeles, but also many other agencies. For example, the Ballona Creek Trash TMDL also applies to the California Department of Transportation (Caltrans) and the cities of Los Angeles, Culver City, Beverly Hills, Santa Monica, West Hollywood, and Inglewood. The Los Angeles River Trash TMDL also affects Caltrans, the City of Los Angeles, and 41 other municipalities within the Los Angeles River watershed. The estimated annual operation and maintenance costs to comply with these requirements for the DPW and other agencies is expected to exponentially increase in coming years.



**Figure 8 – EPS caught in the In-Stream Floating Net**



Figure 9 – EPS in the river

Caltrans - District 7, which includes Los Angeles and Ventura Counties and is the second largest of the 12 workforce districts, is responsible for maintaining 915 freeway and highway miles in Los Angeles County. Its maintenance activities include removing litter from freeways and highways. In fiscal year 2005-2006, District 7 collected 50,000 cubic yards of litter and debris at a cost of \$12 million, not including the thousands of man hours spent by community service workers collecting litter along the highways.

### **Ecosystem Impacts From Littered Expanded Polystyrene Food Containers**

EPS food container litter not only creates blight, it also has many adverse effects on marine and land-based wildlife. Due to the County's extensive and diverse watersheds, many of the littered EPS food containers find their way into local beaches, and eventually the ocean. Studies have reported that up to 90 percent of marine debris is plastic, and most of the debris (60 to 80 percent) is land-based.<sup>17</sup> Several litter clean-ups in Southern California show that EPS food containers make up a considerable portion of the litter.<sup>18</sup> It is estimated that over 267 species of wildlife have been affected by EPS litter, including birds, whales, fish, and many other wildlife.<sup>19</sup>

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<sup>17</sup> "The Problem with Marine Debris," California Coastal Commission, <http://www.coastal.ca.gov/publiced/marinedebris.html> (June 17, 2008).

<sup>18</sup> Moore, S.L., D. Gregorio, M. Carreon, S.B. Weisberg and M.K. Leecaster. – 2001. Composition and distribution of beach debris in Orange County, California. *Mar. Pollut. Bull.*, 42(3): 241-245.,

<sup>19</sup> "The Plastic Debris, Rivers to Sea Project," Algalita Marine Research Foundation, [http://www.plasticdebris.com/PRDS\\_Brochure\\_DOWNLOAD.pdf](http://www.plasticdebris.com/PRDS_Brochure_DOWNLOAD.pdf). (December 18, 2007).



Figure 10 – Egret looks for food among EPS and other trash

Although the impacts of EPS on the ecosystem are not precisely quantified, several anecdotal reports have documented numerous health impacts on wildlife and the natural environment attributed to EPS litter. EPS has impacted marine life and the environment in the following unintended ways:

- Depriving animals of nutrients by artificially filling the stomach so that food cannot be consumed. Whales and large birds, for example, often have particles permanently lodged in the stomach after inadvertently swallowing EPS particles during feeding.
- Infecting wildlife with harmful toxins that can poison the animal.<sup>20</sup>
- Photo-degradation causes plastics to breakdown into small pieces, further dispersing EPS particles in the environment.
- Small pieces are capable of absorbing and concentrating other harmful pollutants.<sup>21</sup>

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<sup>20</sup> NOAA Marine Debris Program, [www.marinedebris.noaa.gov](http://www.marinedebris.noaa.gov) (December 12, 2007), "The Plastic Debris, Rivers to Sea Project," Algalita Marine Research Foundation, [http://www.plasticdebris.com/PRDS\\_Brochure\\_DOWNLOAD.pdf](http://www.plasticdebris.com/PRDS_Brochure_DOWNLOAD.pdf). (December 18, 2007).

<sup>21</sup> "Pelagic Plastic - A Report to the California Legislature," prepared by the Algalita Marine Research Foundation. April 9, 2007.

## **Anti-littering Law**

State law requires any person convicted for littering to pay the following fines:

- Between \$250 and \$1,000 (first conviction)
- Between \$500 and \$1,500 (second conviction)
- Between \$750 and \$3,000 (third conviction)

In addition, the court may require a person to perform eight hours of community service by picking up litter.<sup>22</sup>

This law is difficult to enforce because a law enforcement officer must observe the person in the act of littering. In addition, the inadvertent littering of EPS food containers due to wind (which is a significant source) is extremely difficult to enforce because it is not possible to identify and fine the person causing the inadvertent litter.

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<sup>22</sup> Section 374.4 of the Penal Code.

## CHAPTER 4

### ALTERNATIVE PRODUCTS ASSESSMENT

Many alternatives are available to assist County facilities in successfully transitioning away from expanded polystyrene (EPS) food containers where appropriate. By utilizing alternative products instead of EPS food containers, the County can reduce the environmental and economic impacts of these materials. The following chapter focuses on these alternative products, including an explanation of their effective use, a brief description of the manufacturing processes, and the relative impact of these products on the environment.

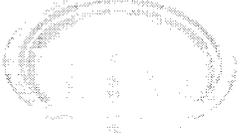
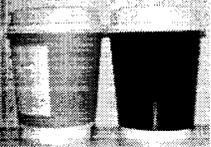
#### List of Current Alternative Products

The following is a list of alternatives to EPS food containers.

- Reusable Products: Reusable products include glass, ceramic, wood, metal, hard plastic, stoneware, or other durable products designed to be reused.
- Recyclable Products: Single-use products made entirely from plastic, aluminum tin, and other materials that can be readily recycled. This includes non-foamed polystyrene products.
- Biodegradable Polymer Products: These are new products utilizing corn, potato, sugarcane, or other natural starches and fibers to create biodegradable products.
- Paper Products: Paper products are made from tree fibers (virgin or recycled). For purposes of this report, paper products lined with biodegradable materials are considered equivalent to pure paper products.
- Non-biodegradable Coated Paper Products: Paper products coated with a non-biodegradable petroleum-based liner.

A table of these products, with cost information and a visual representation, is presented on Table 4.

**Table 4 – Types of alternatives to EPS\***

Reusable	Durable Goods (Reusable)	Various	
Recyclable Products	Recyclable Products	\$0.05 - \$0.10	
Biodegradable	Biodegradable polymers, including Bagasse and Polylactic Acid (PLA)*	\$0.05	
		\$0.25	
		\$0.12	
		\$0.20	
		\$0.06	
Other	Coated Paper Products (cups with non-biodegradable petroleum based coating look the same but cost less, about \$0.06)	\$0.05 - \$0.10	

\* Defined on page 26.

- In comparison to EPS food containers, comparable alternative products may be significantly more expensive to purchase, depending on the nature of the

material used, manufacturing process, and the durability of the product. However due to the diversity of readily available alternatives, some of which are comparable in cost to EPS, the vast majority of County Departments can comply with this restriction with little or no impact on their overall budgets, of which food container purchases are only a small component. For other Departments where health, safety and/or security may require a specific type of alternative product in lieu of EPS food containers, the transition to an alternate product may not be feasible for the foreseeable future based on the significant cost involved.

### Assessment of Relative Impacts

In order to accurately assess the current market of products available as alternatives to EPS food containers, the materials listed below were evaluated based on the following key criteria: product type, renewable properties, compostibility, recyclable, litter potential. This analysis shaped the hierarchy of alternatives recommended in Chapter 6. A more detailed discussion of the relative impacts of these alternatives follows below in Table 5.

**Table 5 – Product Impact Matrix**

<b>Reusable</b>	<b>Varies</b>	<b>N/A</b>	<b>Varies</b>	<b>Unlikely</b>
<b>Polylactic Acid (PLA)</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>	<b>Somewhat</b>
<b>Other Compostable Polymers</b>	<b>Yes</b>	<b>Yes</b>	<b>No</b>	<b>Somewhat</b>
<b>Paper</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes, but challenging</b>	<b>Somewhat</b>
<b>Coated Paper (petroleum-based coating)</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>Somewhat</b>
<b>Plastic #1&amp;2</b>	<b>No</b>	<b>No</b>	<b>Yes</b>	<b>Somewhat</b>
<b>Plastic #3-7 (incl. non-EPS #6)</b>	<b>No</b>	<b>No</b>	<b>Yes, but challenging</b>	<b>Somewhat</b>
<b>EPS</b>	<b>No</b>	<b>No</b>	<b>Yes, under limited circumstances</b>	<b>Highly</b>

**Product Types**

### Reusable Products

The preferred environmental alternative to EPS products are reusable products. These products can be made from glass, ceramic, wood, metal, hard plastics, stoneware or other durable materials designed to be reused. Since they can be reused over and over again, these products can reduce impacts from the extraction of raw materials, manufacturing, and transportation of disposable products, and thus are exceedingly more sustainable than any other disposable or single-use alternative.

### Compostable/Biodegradable Products

Compostable/Biodegradable products are more sustainable and carbon neutral, and can be derived from potato, corn, wheat, sugarcane, or tapioca sources, and are suitable as hot and cold food containers. These materials are capable of undergoing decomposition and can be used as an organic feedstock or soil amendment when commercially composted.

Compostable/Biodegradable products are: 1) certified based on the American Society for Testing and Materials standard D6400; 2) comparable in energy and emissions to EPS; and 3) able to decompose naturally in the environment. However, these products are typically more expensive than EPS. Depending on numerous factors, including quantity, type of container, material type, vendor source, etc., these products may be up to twice as expensive as comparable EPS food containers. In addition, it is unlikely these products will be composted due to the lack of commercial composting facilities in Los Angeles County.

There are a variety of biodegradable materials derived from natural resources and include products made from the following materials:

- PLA: is a corn-based resin used to create clear plastic cups and containers suitable for cold food and drink (up to 110° F). PLA is also used as a coating for various paper products instead of the conventional poly-ethylene liners. PLA is more expensive than many petroleum-derived commodity plastics, but it is becoming more affordable as production increases. The degree to which the prices will drop, and the degree PLA can compete in the marketplace with petroleum-derived polymers remains uncertain.
- Bagasse: French for waste or refuse, is the shredible leftover remaining after sugarcane extraction which can be molded to create an array of food containers (like paper). Bagasse is suitable for hot and cold food, and is heat resistant up to 220° F.
- Other Biodegradable Products: Like Bagasse, products made of the refuse of corn, potatoes, rice, and other starch materials may be molded to create an array



of food containers used for hot or cold food containers (depending on the manufacturer).

- Paper: Historically, paper has been used as the preferred material for single use packaging or as food item containers. Often, paper products are lined with either plastic or wax to prevent leakage and enhance durability. Paper food containers can be made from tree fiber (virgin or recycled), and can be coated with bio-plastics instead of petroleum derived plastics, making the final product compostable. Paper products, however, have slight drawbacks including emissions generated from manufacture.

### Recyclable Products

Plastics other than EPS are neither biodegradable nor renewable, however certain plastics, especially type #1 (PET) and type #2 (HDPE), have a well established recycling market. This is due to the widespread acceptance of these plastics in curbside recycling programs and the California Redemption Value placed on certain plastic beverage containers. As a result, these plastic containers have a greater chance of being recycled and are less likely to end up as litter. Higher number (type #3-7) plastics are more challenging to recycle and also have a lower market value, as a result they are recovered for recycling at a much lower rate. Appendix E explains the differences among these plastics and their most common uses among food containers. Other recyclable products include aluminum or tin containers that can be cleaned and recycled through curbside recycling.

## **Issues Impacting Alternatives Assessment**

### Sustainability

The sustainability of products is a critical component of the net environmental impacts of different alternatives, and takes into account the life cycle energy and materials needed to make the product, the source of the materials from which the product is made, and the recyclability of the products. In general, products made from renewable, naturally occurring resources (such as tree fiber or other plant material) are more sustainable than products made from non-renewable resources, such as fossil fuels. Since these products are made from natural and renewable resources rather than non-renewable (and by definition non-sustainable) resources, they are considered by industry standards to be carbon neutral and sustainable.

### Single-Use Disposal

The CIWMB believes “replacing single-use food service polystyrene, which cannot be effectively recycled, with compostable alternatives may provide additional source

reduction potential.”<sup>23</sup> In general, most EPS food containers are highly contaminated by food residue which, as a result, cannot be recycled. Recycling EPS food containers is currently not economically viable due to the high cost of transporting large volumes of the light weight material and the low cost of virgin material. Contamination, along with the low market value of recycled EPS, has hindered development of an EPS recycling market. Consequently, EPS food containers are used and disposed of after a single use.

#### Biodegradability/Compostability

Biodegradable alternative products that require a commercial composting facility for full breakdown face a considerable hurdle due to the lack of composting infrastructure within Los Angeles County. While there are currently no commercial composting facilities in the County, the Sheriff’s Department is currently investigating development of an in-vessel composting facility at their Pitchess Detention Center, a model that can be replicated at other County facilities. Composting would reduce environmental impacts, including disposal impacts of biodegradable alternatives, and may provide an additional cost reduction from disposal costs that would help offset the fact that biodegradable products are generally more expensive.

#### Recycling

EPS food containers collected through a curbside recycling program or left in a drop-off bin are very often contaminated, which limits their recyclability.<sup>24</sup> Very recently, a method has been developed for the separate collection and aggregation of source separated EPS food packaging containers for recycling. In order to be successful, EPS users must have significant quantities of uniform EPS food packaging containers that can be relatively clean and entirely separated from other materials for collection. In certain applications this system can provide for the collection and recycling of EPS food packaging containers. On the other hand, plastic products, especially those made from #1 or #2 plastics and those with a CRV value, along with aluminum products, have been shown to be effectively recovered and recycled.

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<sup>23</sup> “Use and Disposal of Polystyrene in California”, California Integrated Waste Management Board. 2004. <http://www.ciwmb.ca.gov/Publications/Plastics/43204003.doc>

<sup>24</sup> Ibid.

## **CHAPTER 5**

### **MUNICIPAL BANS – CASE STUDIES**

Many cities and counties throughout the nation have adopted resolutions or ordinances aimed at limiting the negative impacts of expanded polystyrene (EPS) in their communities. Since 1988, 14 jurisdictions have been identified as having implemented a ban on polystyrene. Below are summaries of these case studies.

#### **City of Aliso Viejo**

The City of Aliso Viejo adopted an ordinance prohibiting the use of EPS food service products in 2004. The ordinance prohibits the use of EPS food containers by the City of Aliso Viejo, within city-owned property, facilities, and city-sponsored events. The ordinance is enforced by the City Manager and violations of the ordinance result in issuance of administrative citations.

#### **City of Berkeley**

The City of Berkeley adopted an ordinance in 1988 to prohibit the purchasing and use of EPS food containers, which took effect on January 1, 1990. The ordinance prohibits the use of EPS food packaging containers by the City of Berkeley and at any City-sponsored event. The ordinance also prohibits restaurants and retail food vendors from utilizing EPS food containers. The ordinance is monitored by the City Manager, who may grant specific exemptions. Violations of the ordinance may result in an infraction of the Berkeley Municipal Code, leading the City Attorney to seek legal, injunctive, or other equitable relief to enforce the ordinance.

#### **City of Calabasas**

The City of Calabasas adopted an ordinance prohibiting the use of EPS food service products in 2007. The ordinance prohibits City facilities, restaurants, retail food vendors or non-profit food providers, and city-sponsored events from utilizing EPS food containers. The ordinance also requires the use of environmentally acceptable packaging (i.e. recyclable, biodegradable, degradable) by March 31, 2008, and reporting on-going compliance on the first business day of each calendar year. Violations of the ordinance will result in legal, injunctive, or other equitable relief sought by the City Attorney as an enforcement mechanism.

#### **City of Capitola**

The City of Capitola adopted an ordinance prohibiting the use of EPS food service products in 2006, which took effect July 1, 2007. The ordinance prohibits City facilities, restaurants, retail food vendors or non-profit food providers, and city-sponsored events from utilizing EPS food containers. The ordinance also requires the use of biodegradable or compostable disposable food service ware. Food vendors are strongly

encouraged to re-use food service ware in place of using disposable food service ware. The ordinance is enforced by the City Manager and violations result in issuance of administrative citations.

### **City of Emeryville**

The City of Emeryville adopted an ordinance prohibiting the use of EPS food service products in 2007. The ordinance prohibits City facilities, restaurants, retail food vendors or non-profit food providers, and city-sponsored events from utilizing EPS food containers. The ordinance also requires the use of biodegradable/compostable or recyclable food service ware. The ordinance is enforced by the City Manager and violations result in issuance of administrative citations.

### **City of Huntington Beach**

The City of Huntington Beach adopted a resolution prohibiting the use of EPS food service products in 2004. The ordinance prohibits EPS food containers to be bought or used by the City, within city-owned property, facilities, and city-sponsored events. The resolution is monitored by the Community Services Director and violations result in forfeiture of the contractor's security deposit.

### **City of Malibu**

The City of Malibu adopted an ordinance prohibiting the use of EPS food service products in 2005. The ordinance prohibits City facilities, restaurants, retail food vendors or non-profit food providers, and city-sponsored events from utilizing EPS food containers. The ordinance is monitored by the City Manager and the Parks and Recreation Director, and violations may result in forfeiture of the contractor's security deposit, and or legal, injunctive, or other equitable relief. Enforcement is augmented via reporting from residents and other businesses.

### **City of Oakland**

The City of Oakland adopted an ordinance prohibiting the use of EPS food containers in 2006, which took effect on January 1, 2007. The ordinance prohibits City facilities, restaurants, retail food vendors or non-profit food providers, and city-sponsored events from utilizing EPS food containers. The ordinance is enforced by the City Administrator by responding to citizen complaints, and violations result in issuance of administrative citations.

### **City of Portland, Oregon**

The City of Portland adopted an ordinance in 1988 banning the use of EPS food containers, which took effect on January 1, 1990. The ordinance prohibits restaurants, retail food vendors or non-profit food providers from utilizing EPS food containers. Violations of the ordinance result in a penalty issued by the Office of Sustainable Development specifying the violation and appropriate penalty. The Office of

Sustainable Development is also authorized to promulgate additional regulations and other actions reasonable and necessary to enforce the ordinance.

### **City of Rancho Cucamonga**

The City of Rancho Cucamonga adopted an ordinance prohibiting the use of EPS food service products in 2007. The ordinance prohibits the use of EPS food containers by the City of Rancho Cucamonga, within city-owned property and facilities, and at City-sponsored events. The ordinance does not specify penalties for non-compliance.

### **City of San Clemente**

The City of San Clemente passed a resolution prohibiting the use of EPS food service products in 2004. The resolution prohibits the use of EPS food containers within City facilities and at City-sponsored events. Violation results in forfeiture of security deposit and an automatic denial of future rental requests.

### **City and County of San Francisco**

The City and County of San Francisco passed an ordinance prohibiting use of EPS food service products in 2006, which took effect June 1, 2007. The ordinance prohibits City facilities, restaurants, retail food vendors or non-profit food providers, and City-sponsored events from utilizing EPS food containers. The ordinance also requires use of biodegradable/compostable or recyclable disposable food service ware. The ordinance is enforced by the City Administrator and violations of the ordinance result in issuance of administrative citations.

### **City of Santa Monica**

The City of Santa Monica adopted an Ordinance prohibiting the use of EPS food service products in 2007. The ordinance prohibits City facilities, restaurants, retail food vendors or non-profit food providers, and city-sponsored events from utilizing EPS food containers. The ordinance also required the use of biodegradable/compostable or recyclable disposable food service ware by February 9, 2008. The ordinance is enforced by the Director of the Environmental and Public Works Management Department and violations result in issuance of administrative citations.

### **County of Ventura**

The County of Ventura adopted a resolution prohibiting the use of EPS food service products in 2004. The resolution prohibits the use of EPS food service products at the County harbor, parks, government center, and at County-sponsored events. The ordinance does not specify penalties for non-compliance.

## CHAPTER 6

### FINDINGS AND RECOMMENDATIONS

#### Key Findings

Findings in the report are based on two components, the first involving research findings related to environmental factors and the second involving findings based on questionnaire responses received from County departments and agencies. (Appendix D)

Findings based on environmental factors:

- Reducing the use of EPS food containers would result in a benefit to the environment by reducing litter, and in turn, reducing the negative impact on the marine environment and other wildlife. This reduced litter would also lead to a decrease in cleanup costs.
- Replacing EPS products with reusable and durable goods, where applicable, would have the highest positive impact on the environment.
- Developing a policy restricting the use of EPS products and promoting environmentally friendly alternatives would boost other environmental initiatives and raise environmental awareness.

Findings based on county questionnaire responses:

- Prohibiting the purchase and use of EPS food containers at all County-owned facilities, County offices, County-managed concessions, County-permitted events, and County-sponsored events would be feasible to a great extent, since use of EPS by County departments is relatively moderate and several County departments already use alternative products to some extent.
- In comparison to EPS food containers, comparable alternative products may be significantly more expensive to purchase, depending on the nature of the material used, manufacturing process, and the durability of the product. However due to the diversity of readily available alternatives, some of which are comparable in cost to EPS, the vast majority of County Departments can comply with this restriction with little or no impact on their overall budgets, of which food container purchases are only a small component. For other Departments where health, safety and/or security may require a specific type of alternative product in lieu of EPS food containers, the transition to an alternate product may not be feasible for the foreseeable future based on the significant cost involved.
- Utilizing alternative products is a viable option for departments and agencies provided that additional funding is available. It is expected that most Departments will be able to make the necessary adjustment in future year budgets. If this is not possible, Departments will need to apply for a waiver.

## **Recommendation for Consideration by the Board of Supervisors**

Since EPS food containers contribute disproportionately to the litter and environmental problem within the County of Los Angeles, the County working group recommends phasing out the purchase and use of EPS food containers and encouraging the use of environmentally preferable alternatives by County operations. The following Board action would facilitate implementation of this recommendation:

Adopt a restriction on the purchase and use of all EPS food containers, beginning July 1, 2009, at County-owned facilities, County offices, County-managed concessions, County-permitted events, and County-sponsored events.

Further, authorize the County's Energy and Environmental Team (Team) to grant a waiver under the following circumstances:

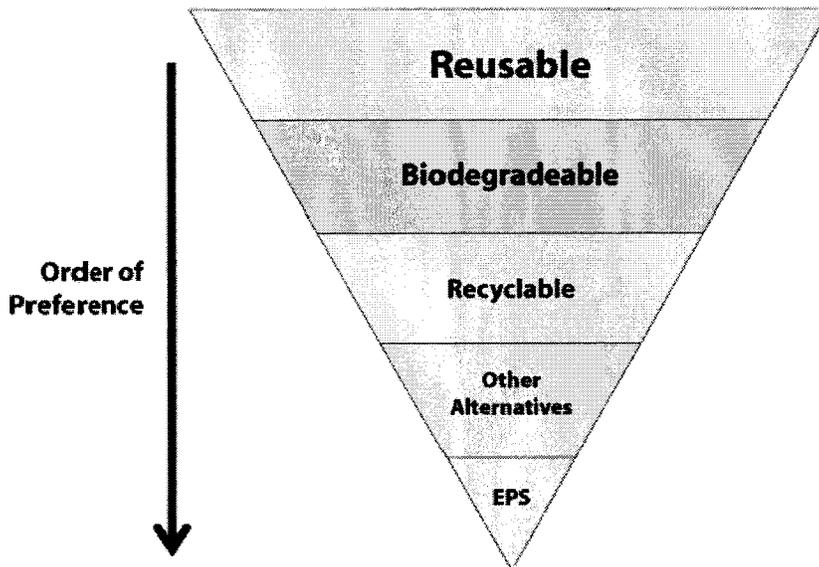
- Health and/or safety operational issues are demonstrated;
- Existing contract requirements stipulate the purchase of EPS products and the contract cannot be amended; and/or
- A County facility incorporates full containment and collection of all EPS food containers generated on site, for the purposes of recycling those containers.

Note: County agencies requiring a waiver must submit a request to the Team specifying the reason(s) a temporary waiver is needed. The Team, in consultation with ISD and Public Works, will make a determination regarding requests on a case by case basis.

In consultation with ISD and Public Works, the Team will provide semi-annual progress reports for a three-year period describing the progress and efforts to phase-out the use of EPS food containers at County operations, including a summary of approved waivers. The Team will also notify Departments of the new policy and provide training on environmentally-friendly alternatives to EPS food containers.

ISD will update the existing Countywide Purchasing Policy for the Purchase of Environmentally Preferable (Green) Products, Policy No. P-1050 (Appendix C), to include an EPS food and beverage container component with specific emphasis on the following hierarchy for procurement of alternative products, as shown in Figure 2 below:

- a. Reusable and durable goods
- b. Biodegradable single-use products, including paper-based single-use products with no petroleum coating
- c. Recyclable single-use products
- d. Other non-EPS products
- e. EPS products, for those cases where a waiver is approved



**Figure 2 – Hierarchy of Preferred Alternatives for Procurement**

In consultation with ISD and DPW, the CEO will retain a consultant to initiate product alternative and guideline study for County purchase agreements for vendors who provide alternative products based on the hierarchy cited in Figure 2 above. The consultant will then develop an EPS training program and train County departments.



# Appendices

# Appendix A: Guidance Matrix

## APPENDICES

### Appendix A: Guidance Matrix

This table provides guidance for compliance with the County ban of EPS food containers.

<b>Organizers of County-sponsored events</b>	√	√	
<b>Permittee of County permitted events</b>	√	√	
<b>County-managed concessions</b>	√		√
<b>County employees</b>	√	√	
<b>Employee clubs</b>	√	√	
<b>County offices</b>	√		√
<b>County-owned facilities</b>	√		√

\*Appendix B provides a list of vendors for this purpose. This is not intended to be an exhaustive list, but serves as a reference.

\*\*ISD has developed a bid for replacements to all EPS products for contracts they coordinate, and is available to assist other Departments in adjusting language in vendor contracts to ensure proper specifications for alternative products.

**Appendix B:  
List of Vendors**

**Appendix B: Summary of Food Service Ware Vendors**

Access Group	14470 Doolittle Dr San Leandro CA	(510) 567-100	<a href="http://www.accessgroupnca.com">www.accessgroupnca.com</a>	Containers, Bowls, Cups, Plates	PLA, Bagasse, Paper Fiber	No
American Paper and Plastics Inc.	1051 E Valley Blvd, El Monte, CA	(626) 444-0000	<a href="http://www.appinc.com">www.appinc.com</a>	Containers, Bowls, Cups, Plates	PLA, Bagasse, Paper Fiber, Corn, Paper Fiber,	
Bay Brokerage Company Inc	1776 Laurel St, San Carlos, CA	(650) 595-1189	<a href="http://www.baybrokerage.com">www.baybrokerage.com</a>	Clear Clamshells for Deli Use		No
BioCorp	15301 140th Ave SE Becker, MN 55308	(866) 428-2242	<a href="http://www.biocorpaavc.com">www.biocorpaavc.com</a>	Bio- containers/cups		No
Biodegradable Food Service LLC	17217 Blue Heron Drive Bend, Oregon 97707- 2434	(541) 593-2191 (503) 810-5707	<a href="http://www.bdfs.net">www.bdfs.net</a>	Containers, Bowls, Cups, Plates	Bagasse, PLA, PO, Bamboo Fiber, Potato Fiber	No
Biopak-gsd Packaging	1854 East Home Fresno, CA 93703 123 South Hill	(559) 441-1181	<a href="http://www.gsdpackaging.com">www.gsdpackaging.com</a>	Paper Containers		No
BiRite	Drive Brisbane, CA 94005	(415) 656-0187 (800) 227-5373	<a href="http://www.BiRite.com">www.BiRite.com</a>	All	Paper Fiber, PLA	No
Brenmarco Retail Store Supplier	8523 South 117th St. Omaha, Nebraska 68128	(800) 783-7759	<a href="http://www.brenmarco.com">www.brenmarco.com</a>	All	Paper Fiber, PLA Coating	No
C&J CO	105 Jackson St Oakland CA	(510) 663-0188	N/A	N/A		No
Cash & Carry	2300 57th Street Vernon, CA 90058	(323) 583-0800	<a href="http://www.jetro.com">www.jetro.com</a>	All	Paper Fiber, PLA	No
Cater Green	Los Angeles 3421-3433 West El Segundo Boulevard Hawthorne, CA 90250	(323)663-7747	<a href="http://www.catergreen.com">www.catergreen.com</a>	Bio-plastics		No
Cereplast		(310)676-5000	<a href="http://www.cereplast.com">www.cereplast.com</a>		Corn fibers	No
Costco	N/A	(415) 626-4388	<a href="http://www.costco.com">www.costco.com</a>	Containers, Bowls, Cups, Plates	Paper Fiber, PLA	

EarthSmart LL	N/A	(480) 206-4513	<a href="http://www.earthsmartllc.com">www.earthsmartllc.com</a>	Cups, Plates		No
Eco-Products	3640 Walnut St. Boulder, CO 80301	(303) 449-1876	<a href="http://www.biodegradablestore.com">www.biodegradablestore.com</a> <a href="http://www.ecoproducts.com">www.ecoproducts.com</a>	Containers, Bowls, Cups, Plates	Bagasse, PLA, Paper Fiber, Corn	No
Excellent Packaging and Supply	3220 Blume Dr, Suite 111, Richmond CA	(510) 243-9501/ (800) 317-2737	<a href="http://www.excellentpackaging.com">www.excellentpackaging.com</a>	Containers, Bowls, Cups, Plates	PLA, Bagasse, Paper	No
Genpak	68 Warren Street. Glen Falls, New York 12801	(310) 676-5000 (518) 798-9511	<a href="http://www.harvestcollection.genpak.com/products.cfm">www.harvestcollection.genpak.com/products.cfm</a>	Containers, Bowls, Cups, Plates	Corn	No
Good Humans	500 Soquel Ave, Suite F, Santa Cruz, CA	(866) 420-4208	<a href="http://www.goodhumans.com">www.goodhumans.com</a>	N/A		No
Green Earth Office supply	P O Box 719, Redwood Estates CA	(800) 327-8449	<a href="http://www.greenearthofficesupply.com">www.greenearthofficesupply.com</a>	Containers	PLA, Bagasse, Paper, Corn Fiber	No
Green Home	850 24th Ave. San Francisco, CA 94121	(877) 828-6400	<a href="http://www.greenhome.com">www.greenhome.com</a>	Containers	Glass, Corn, PLA, Stainless Steel	No
Green is Green	N/A	(415) 215-8553	<a href="http://www.greenisgreeninc.com/GiG-product%20list.pdf">http://www.greenisgreeninc.com/GiG-product%20list.pdf</a>	Containers, Bowls, Cups, Plates	Bagasse, PLA, Potato, Corn	No
Green Wave by Western Pacific Associates	623 N. Main Street Orange, CA 92868	(714) 538-8810	<a href="http://www.greenwave.us.com">www.greenwave.us.com</a>	Containers, Plates	Bagasse,	No
GreenLine	631 S. Pine Street, York PA 17403	(800) 641-1117	<a href="http://www.greenlinepaper.com">www.greenlinepaper.com</a>	Containers, Bowls, Cups, Plates	PLA, Bagasse, Paper Fiber PLA coated,	No
GDS Packaging	1854 East Home Fresno, CA 93703	(559) 441-1181	<a href="http://gsdpackaging.com/">http://gsdpackaging.com/</a>	Containers	Paper	No
Huhtamaki	9201 Packaging Drive, De Soto, KS 66018	(650) 344-3605 (913) 583-3025	<a href="http://www.us.huhtamaki.com">www.us.huhtamaki.com</a>	Containers, Bowls, Cups, Plates		No
Maple Trade Corp	122 Starlite Street, South San	(650) 296-8998	<a href="http://www.mapletradecorp.com">www.mapletradecorp.com</a>	Containers, Bowls, Cups, Plates	Plastic #5	No

	Francisco, CA 94080								
Moresco Distributing	1120 Holm Rd, Petaluma, CA 3361 Pomona Blvd, Pomona, CA	(707) 843-0254	<a href="http://www.moresco.biz">www.moresco.biz</a>	Containers, Cups				No	
PAMS		(909) 869-7267	<a href="http://www.pamsinc.com">www.pamsinc.com</a>	N/A				No	
Pan Pacific Export & Import	N/A	(510) 582-4893 (510) 582-4817	<a href="http://www.waterfromfiji.com">www.waterfromfiji.com</a>	Containers, Bowls, Cups, Plates			Bagasse	No	
Paper Company	2815 Warner Avenue Irvine, CA 92606	1-(800) 834-6248 (714) 444-2171	<a href="http://www.thepapercompany.net">http://www.thepapercompany.net</a>	Containers, Bowls, Cups, Plates			PLA, Paper Pla coated, Bagasse, Potato	No	
PPT Brothers	N/A	(415) 430-7030	<a href="mailto:tpm48@hotmail.com">tpm48@hotmail.com</a>	Containers, Bowls			Plastic #5	No	
P & R Paper Company	P.O. Box 590 Redlands, CA 92373	(909) 794-1108	<a href="http://www.ppaper.com">www.ppaper.com</a>	Containers			Paper	No	
Prime Link Solutions	N/A	(650) 375-1398	<a href="mailto:alan@primelinksolution.com">alan@primelinksolution.com</a>	Containers, Bowls, Cups, Plates			Bagasse	No	
Rainbow Grocery	1745 Folsom St., San Francisco, CA. 94103	(415) 863-0620	<a href="http://www.rainbowgrocery.org">www.rainbowgrocery.org</a>	Cups, Plates			Bagasse, Corn	No	
Recyclaholics	5016 Turtle Lane East, Shoreview MN 55126	(612) 521-5667	<a href="http://www.claholics.com/foodservice.htm">www.claholics.com/foodservice.htm</a>	Containers			PLA, Paper Pla coated, Bagasse, Potato	No	
Recycline	681 Main St., Waltham, MA 02451	(781) 893-1032	<a href="http://www.recycline.com">www.recycline.com</a>	Cups, Plates			Plastic #5	No	
Restaurant Depot	15-24 132nd Street, College Point, NY 11356	(415) 920-2888	<a href="http://www.restaurantdepot.com">www.restaurantdepot.com</a>	Containers, Bowls, Cups, Plates			PLA, Paper Fiber	No	
S F supply Master	N/A	(415) 642-0700	<a href="mailto:shah@sfsupplymaster.com">shah@sfsupplymaster.com</a>	Containers, Bowls, Cups, Plates			PLA, Paper Fiber, Bagasse	No	
Shop Natural	350 S. Toole Avenue, Tucson, Arizona 85701	(520)884-0745	<a href="http://www.shopnatural.com">www.shopnatural.com</a>	N/A				No	
Simply Biodegradable	N/A	(509) 910-1430	<a href="http://www.simplybiodegradable.com">www.simplybiodegradable.com</a>	Containers			Bagasse, PLA, Corn,	No	
Smart and	22631 Ventura	(818) 225-9590	<a href="http://www.smartandfinal.com">www.smartandfinal.com</a>	Containers, Bowls,				No	

Final	Blvd, Woodland Hills CA				Cups, Plates	
Stalk Market	N/A	(707) 935-8439 (415) 531-3758	<a href="http://www.stalkmarket.net">www.stalkmarket.net</a>		Containers	Bagasse
Sunlight Sales	11625 Overhill Dr, Auburn, CA	(530) 308-4116	<a href="http://www.sunlight.com">www.sunlight.com</a>		Containers, Bowls, Cups, Plates	No
Sysco Food Services	N/A	(510) 226-3426	<a href="http://www.sysco.com">www.sysco.com</a>		Containers, Bowls, Cups, Plates	Corn, PLA, Paper, Bagasse
The Individual Group	5496 Lindbergh Lane Bell, CA 90201	(323) 981-2800	<a href="http://www.individualgroup.com">www.individualgroup.com</a>		Containers, Bowls, Cups, Plates	Paper
Three Bridges Trading	N/A	(415) 609-7362	<a href="http://www.threebridgestrading.com">www.threebridgestrading.com</a>		Containers, Bowls, Cups, Plates	Bagasse
Trade Supplies	N/A	(323) 581-3250 x:236	<a href="http://www.tradesuppliesinc.com">www.tradesuppliesinc.com</a>		Cereplast & Nature Biodegradable	Yes
Tree Cycle	24555 Conifer Dr, Huson, MT	(406) 626-0200	<a href="http://www.treecycle.com">www.treecycle.com</a>		Containers, Bowls, Cups, Plates	Paper, Bagasse, Corn, PLA coated.
United Natural Foods Inc	1101 Sunset Blvd, Rocklin, CA	(916) 625-4100 (800) 679-8735	<a href="http://www.unfi.com">www.unfi.com</a>		N/A	No
US Food Service	N/A	(925) 606-3585	<a href="http://www.usfoodservice.com">www.usfoodservice.com</a>		Containers, Bowls, Cups, Plates	Corn fibers, Bagasse, PLA coated paper.
WorldCentric Store	195 C Page Mill Rd, Palo Alto, CA	(650) 283-3797	<a href="http://www.worldcentric.org">www.worldcentric.org</a>		Containers, Bowls, Cups, Plates	Bagasse, PLA, Potato

**Note: this table is for reference only – it is not intended to be exhaustive, and is accurate at the time of publication of this report. Please verify information directly with the vendors listed.**

**Appendix C:  
ISD Purchasing Policy**

Title:		Contents:	<b>P-1050</b>
<b>PURCHASE OF ENVIRONMENTALLY PREFERABLE PRODUCTS (GREEN PURCHASING)</b>		Submitted By:	<b>Purchasing Division</b>
		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	<b>P-1000</b>
		Page No.	<b>1 of 7</b>

## Purpose

Los Angeles County is a very large consumer of goods and services and the purchasing decisions of our employees and contractors can positively or negatively affect the environment. By including environmental considerations in our procurement decisions, along with our traditional concerns with price, performance and availability, we will remain fiscally responsible while promoting practices that improve public health and safety, reduce pollution, and conserve natural resources. The purpose of this document is to establish the framework for establishing an environmentally based purchasing program for Los Angeles County.

## Board Policy

On January 16, 2007, the Board of Supervisors adopted a Countywide Policy instructing that all County departments to implement the County's Energy and Environmental Programs for energy conservation and environmental stewardship (See Board of Supervisors Policy No. 3.045, Energy and Environmental Policy). To implement the County's "green" initiatives, County departments will be tasked to:

- Institute practices that reduce waste by increasing product efficiency and effectiveness;
- Purchase products that minimize environmental impacts, toxics, pollution, and hazards to worker and community safety to the greatest extent practicable, and to
- Purchase products that include recycled content, are durable and long-lasting, conserve energy and water, use agricultural fibers and residues, reduce greenhouse gas emissions, use unbleached or chlorine free manufacturing processes, and use wood from sustainable harvested forests.

To meet the Board's policy objectives, we must develop and implement procedures for the procurement of environmentally preferable (or "green") and energy efficient products and services.

Purchasing objectives will include acquisitions that:

- Conserve natural resources;
- Minimize environmental impacts such as pollution and use of water and energy;
- Eliminate or reduce toxics that create hazards to workers and our community;
- Support strong recycling markets;
- Reduce materials that are put into landfills;
- Increase the use and availability of environmentally preferable products that protect the environment;
- Encourage manufacturers and vendors to reduce environmental impacts in their production and distribution systems; and
- Create a model for successfully purchasing environmentally preferable products that encourages other purchasers in our community to adopt similar goals.

Title:		Contents:	<b>P-1050</b>
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		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	P-1000
		Page No.	2 of 7

In coordination with the County's Environment and Energy Team, ISD's Purchasing Division will have overall responsibility for this program. This will include establishing appropriate standards for green purchasing, assessing cost effectiveness and making recommendations related to acquisition strategies and maintaining data and issuing reports related to the County's progress in environmental purchasing. These areas are further detailed in the attached procedures.

**PURCHASING PROCEDURES AND STANDARDS**

**Defining Environmentally Preferable Products**

All products for which the United States Environmental Protection Agency (U.S. EPA) has established minimum recycled content standard guidelines, such as those for printing paper, office paper, janitorial supplies, construction, landscaping, miscellaneous, and non-paper office products, shall contain the highest post-consumer content practicable, but no less than the minimum recycled content standards established by the U.S. EPA Guidelines.

In general, environmentally preferable products and services are those that would have a reduced effect on human health and the environment when compared with competing products and services. More specifically, this comparison would include consideration of all phases of the product's life cycle, including raw materials acquisition, production, manufacturing, packaging, distribution, operation, maintenance and disposal, including potential for reuse or ability to be recycled.

In practice, the objective is to purchase products that have reduced environmental impact because of the way they are made, used, transported, stored, packaged and disposed of. It means looking for products that do not harm human health, are less polluting and that minimize waste, maximize use of bio-based or recycled materials, conserve energy and water, and reduce the consumption or disposal of hazardous materials. When determining whether a product is environmentally preferable, the following standards should be considered:

✓ Biobased	✓ Made from renewable materials
✓ Biodegradable	✓ Compostable
✓ Carcinogen-free	✓ Low toxicity
✓ Bioaccumulative toxic (PBT)-free	✓ Recycled content, Reusable
✓ Chlorofluorocarbon (CFC)-free	✓ Reduced packaging, Refurbished
✓ Heavy metal free (i.e., no lead, mercury, cadmium)	✓ Reduced greenhouse gas emission
✓ Low volatile organic compound (VOC) content	✓ Energy, Resource and Water efficient

Title:		Contents:	<b>P-1050</b>
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		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	<b>P-1000</b>
		Page No.	<b>3 of 7</b>

## **Purchasing Environmentally Preferable Products**

### County Purchasing Agent Responsibilities – General

In coordination with the County's Environment and Energy Team, ISD's Purchasing Division will be responsible for:

- Working with other governmental purchasing groups and agencies, such as U.S. Communities, NACO and CSAC to determine appropriate standards for green purchasing.
- Assigning central purchasing staff to evaluate various green products and to provide guidance and assistance to County departments.
- Developing and implementing a 5-year plan to phase in various categories of purchased goods under the green program umbrella. Relative easy to implement items (e.g., paper, cleaning supplies, etc.) will be implemented very early in the program.
- Heading up teams to evaluate various types of products where the cost differential is great and/or the products are not considered good substitutes.
- Assessing and making recommendations on the use of price preferences.
- Maintaining data and issuing reports related to the County's progress in environmental purchasing.
- Establishing central purchasing agreements with a catalogue of environmentally friendly and energy efficient products and to modify our existing agreement data bases for the easy identification of green products.

In establishing countywide commodity agreements, the County's Purchasing Agent will specify the requirement for environmentally preferable products where applicable, and will evaluate product alternatives where appropriate. This evaluation would include: consideration of total costs expected during the time a product is owned, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime of a product(s) as compared to other alternatives.

In the evaluation and/or award process:

- ✓ Products that are durable, long lasting, reusable or refillable will be preferred whenever feasible.
- ✓ Wherever possible, suppliers of electronic equipment, including but not limited to computers, monitors, printers, and copiers, shall be requested to take back equipment for reuse or environmentally safe recycling when the County discards or replaces such equipment; and
- ✓ All suppliers shall be required, where applicable, to use and recycle packaging material used for product delivery.

Title:		Contents:	<b>P-1050</b>
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		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	<b>P-1000</b>
		Page No.	<b>4 of 7</b>

County Department Responsibility – General

Under the delegated authority of the County Purchasing Agent, departmental buyers are responsible to evaluate short-term and long-term costs in comparing product alternatives. Through Purchasing Agent agreements, Departments shall be required to:

1. Purchase only Recycled-Content Bond Paper in accordance with the Board of Supervisors instructions of September 7, 1999 instructions to all Departments.
2. Purchase Energy Efficient products in order to conserve electrical power, reduce peak power consumption, lower energy costs, provide market leadership and support energy-efficient purchasing by County government.
3. Review and use "green" product alternatives in County and other authorize government agreements provided on-line at: <http://www.uscommunities.org/gpa/green/grSupplier.htm>

Remanufactured Products

The County shall purchase remanufactured products such as laser toner cartridges, furniture, and equipment whenever practicable, but without reducing safety, quality or effectiveness.

Energy and Water Conserving Equipment

Where applicable, energy-efficient equipment shall be purchased with the most up-to-date energy efficiency functions. This includes, but is not limited to, high efficiency space heating systems and high efficiency space cooling equipment.

When practicable, the County shall replace inefficient lighting with energy efficient equipment.

Energy Star®

Energy Star is a labeling program derived from a partnership between the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE). All products displaying the Energy Star label meet Federal Energy Management Program (FEMP) standards. Typically, this means that labeled products are in the top 25 percent of all similar products when ranked by energy efficiency, and use 25 to 50 percent less energy than their traditional counterparts.

Solicitation for Equipment or Products

Wherever practicable, when equipment or product purchases where FEMP recommended standards or Energy Star labeled products are available, County departments and agencies are expected to include an Energy-efficiency requirement component to their solicitation to purchase those products that meet the recommended standards. Examples of these products include computers, monitors, printers, photocopiers and facsimile machines.

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		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	<b>P-1000</b>
		Page No.	<b>5 of 7</b>

Sample Solicitation Language

“Notice to Bidder: In line with the County policy for the procurement of energy-efficient equipment and products, preference will be given to those products that meet the Federal Energy Management Program (FEMP) standards or possess an Energy Star® label.”

For energy consuming products where there are no FEMP recommended criteria or Energy Star label, departments must consider the purchase products that conserve electrical power and/or natural gas to the maximum extent possible, based on minimum life-cycle costs.

Cost Analysis

Even where energy-efficient products have a higher purchase price than their less efficient counterparts, these products usually save money because they use less energy, often have a longer life, and typically incur less maintenance cost.

These savings, such as from lower energy bills, are achieved throughout the entire lifetime of the product. Thus, when deciding how much money an Energy Star labeled product will save, it is necessary to consider both initial cost (the purchase price) and the costs that will be incurred throughout the life of the product (such as energy and maintenance costs). This is known as Life Cycle Cost.

A listing of Energy Star approved products, as well as the formula for determining Life Cycle Cost is available through the ISD Purchasing web page or by access through the following Internet address:

<http://yosemite1.epa.gov/estar/consumers.nsf/content/officeequipment.htm>

Benefits

The benefits of purchasing Energy Star labeled and FEMP recommended products include:

- Reduced energy costs without compromising quality or performance
- Significant return on investment
- Extended product life and decreased maintenance

Products purchased by the County, and for which the U. S. EPA Energy Star certification is available shall meet Energy Star certification, when practicable. When Energy Star labels are not available, energy efficient products shall be purchased that are in the upper 25% of energy efficiency as designated by the Federal Energy Management Program.

The County shall purchase water-saving products whenever practicable.

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		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	<b>P-1000</b>
		Page No.	<b>6 of 7</b>

Note: Nothing contained in this policy shall be construed as requiring a department to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

### Landscaping

Workers and contractors providing landscaping services for the County shall be encouraged to employ sustainable landscape management practices whenever possible, including, but not limited to, integrated pest management, grass-cycling, drip irrigation, composting, and procurement and use of mulch and compost that give preference to those produced from regionally generated plant debris and/or food waste programs.

Plants should be selected to minimize waste by choosing species that are appropriate to the micro-climate species that can grow to their natural size in the space allotted them and perennials rather than annuals for color. Native and drought-tolerant plants that require no or minimal watering once established are preferred.

Hardscapes and landscape structures constructed of recycled content materials are encouraged.

### Toxins and Pollutants

To the extent practicable, no cleaning or disinfecting products (i.e. for janitorial use) shall contain ingredients that are carcinogens, mutagens, or teratogens. These include chemicals listed by the U.S. EPA or the National Institute for Occupational Safety and Health on the Toxics Release Inventory and those listed under Proposition 65 by the California Office of Environmental Health Hazard Assessment.

When maintaining buildings, the County shall use the lowest amount of VOCs (volatile organic compounds), highest recycled content, and low or no formaldehyde when purchasing materials such as paint, carpeting, adhesives, furniture and casework.

The County shall reduce or eliminate its use of products that contribute to the formation of dioxins and furans. This includes, but is not limited to:

- Purchasing paper, paper products, and janitorial paper products that are unbleached or that are processed without chlorine or chlorine derivatives, whenever possible.
- Eliminating the purchase of products that use polyvinyl chloride (PVC) such as, but not limited to, office binders, furniture and flooring, whenever practicable.

### Agricultural Bio-Based Products

Paper, paper products and construction products made from non-wood, plant-based contents such as agricultural crops and residues are encouraged whenever practicable.

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		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	P-1000
		Page No.	7 of 7

### **Balancing Environmentally Considerations with Performance, Availability and Financial Cost**

Los Angeles County is committed to procuring environmentally preferable goods and services wherever they meet performance standards and requirements of the County at a competitive cost. Nothing in this policy shall be construed as requiring a purchaser or contractor to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price or in a reasonable period of time.

However, when comparing product costs, the County does not focus exclusively on the quoted vendor pricing but also the costs over the life of the product, which includes the initial cost along with maintenance, operating, insurance, disposal, recycle or replacement, and potential liability costs. Examining life cycle costs will save money by ensuring we are quantifying the total cost of ownership before making purchasing decisions.

### **Conservation and Waste Reduction**

Wherever practicable and cost-effective, departments are responsible to institute practices that reduce waste and result in the purchase of fewer products without reducing safety or workplace quality.

Examples would include:

- ✓ Using electronic communication instead of printed,
- ✓ Using double-sided photocopying and printing,
- ✓ Using washable and reusable dishes and utensils,
- ✓ Using rechargeable batteries,
- ✓ Streamlining and computerizing forms,
- ✓ Using "on-demand" printing of documents and reports as they are needed,
- ✓ Leasing long-life products when service agreements support maintenance and repair rather than new purchases,
- ✓ Choosing durable products rather than disposable,
- ✓ Buying in bulk, when storage and operations exist to support it,
- ✓ Re-using products such as, but not limited to, file folders, storage boxes, office supplies, and furnishings.

### **Departmental Responsibilities**

Every County department is responsible to ensure that their respective employees, contractors, and vendors are fully aware and supportive of the County's initiative to purchase environmentally preferable goods and services. To this end, departments are responsible to exercise due diligence in their procurement decisions as well procurements made by their contractors and consultants, promoting the purchase and use environmentally preferable products whenever cost effective, and to the extent practicable for all work completed on behalf of Los Angeles County.

**PRELIMINARY WORKING STAFF DRAFT  
DO NOT CITE OR QUOTE**

**Appendix D:  
County Department Survey Results**

## **Appendix D: Summary Responses From County Departments**

A questionnaire regarding the EPS usage and the use of alternatives was sent to all departments and agencies in the County of Los Angeles.

Nineteen departments do not purchase or use EPS food service products; 12 noted some use of EPS food service products, and nine departments' did not respond to the questionnaire.

Of the 12 departments and agencies that use EPS products:

- Five responded that they use EPS in a minimal nature with two responding that EPS will be phased out by the end of 2007 or early 2008.
- Five departments and agencies use significant amount of EPS products with two responding that they are currently under contractual obligation requiring the purchase of EPS food service products.
- Two departments and agencies indicated modest use of EPS products.

The following is a copy of the EPS questionnaire.

**Expanded Polystyrene Food Service Products:**  
**Questionnaire for County Departments**

Contact Person: \_\_\_\_\_ Department: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

E-mail: \_\_\_\_\_

1. Does your Department purchase or use expanded polystyrene food service products? If so, please list the facilities and briefly describe the current usage, including annual consumption figures:
  
  
  
  
  
  
  
  
  
  
2. Do any of the programs listed above have specific requirements for food service containers, such as the ability to manage hot/cold food, microwave safe, etc.?
  
  
  
  
  
  
  
  
  
  
3. Does your Department have contracts or agreements **requiring** the purchase of expanded polystyrene food service products? If so, when do those contracts end, and do they allow for any revisions prior to expiration?
  
  
  
  
  
  
  
  
  
  
4. If environmentally friendly alternative products were twice as expensive as expanded polystyrene food service products, how much of an impact would this ban have on your Department?
  
  
  
  
  
  
  
  
  
  
5. Other than cost, do you foresee any problems transitioning your Department away from the use of expanded polystyrene food service products?

<b>Agricultural Commission/W&amp;M</b>	NO	NO	NO	NO	NO
<b>Alternate Public Defender</b>	NO	N/A	NO	N/A	NO
<b>Animal Care and Control</b>	NO	N/A	NO	N/A	N/A
<b>Auditor - Controller</b>	NO	N/A	NO	NO	NO
<b>Beaches and Harbors</b>	NO	N/A	NO	NO	NO
<b>Board of Supervisors</b>	NO	NO	NO	NO	NO
<b>Chief Executive Office</b>	YES	Must be Microwavable/Hold Hot Food/Liquids	NO	NO	NO
<b>Chief Information Office</b>	NO	N/A	N/A	N/A	NO
<b>Child Support Services</b>	Minimal	No	No	N/A	No
<b>Children and Family Services</b>	NO	N/A	N/A	N/A	N/A
<b>Commission on Human Relations</b>	YES	Must be Microwavable/Hold Hot Food/Liquids	NO	YES	NO
<b>Community and Senior Services</b>	YES	Hold Hot Food/Liquids	YES	YES	NO
<b>Community Development Commission.</b>	NO	NO	NO	NO	NO
<b>Consumer Affairs</b>	Minimal	NO	NO	Minimal	NO
<b>Coroner</b>	N/A	N/A	N/A	N/A	N/A
<b>County Counsel</b>	NO	N/A	NO	N/A	N/A
<b>District Attorney</b>	N/A		N/A	N/A	
<b>Fire Department</b>	YES	Must Hold Hot Food/Liquids	NO	Minimal	NO
<b>Health Services</b>	YES	NO	NO	NO	NO
<b>Human Resources</b>	NO	N/A	NO	NO	
<b>Internal Services Department</b>	YES	N/A	N/A	N/A	N/A
<b>Mental Health</b>	Minimal	Must be Microwavable	NO	NO	NO
<b>Military and Veterans Affairs</b>	N/A	N/A	N/A	N/A	N/A
<b>Museum of Art</b>	NO	NO	NO	NO	NO
<b>Natural History Museum</b>	NO	NO	NO	N/A	NO
<b>Office of Affirmative Action Compliance</b>	NO	NO	NO	N/A	N/A
<b>Office of Public Safety</b>	NO	NO	NO	N/A	NO
<b>Office of Small Business</b>	N/A	N/A	N/A	N/A	N/A
<b>Office of the Assessor</b>	Minimal	Must be Microwavable/Hold Hot Food/Liquids	NO	NO	NO
<b>Ombudsman</b>	YES	NO	NO	NO	NO
<b>Parks and Recreation</b>	YES	N/A	N/A	NO	NO

<b>Probation</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
<b>Public Defender</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>
<b>Public Health</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Public Library</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Public and Social Services</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>
<b>Public Works</b>	<b>Minimal</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>
<b>Regional Planning</b>	<b>NO</b>	<b>NO</b>	<b>NO</b>	<b>N/A</b>	<b>N/A</b>
<b>Registrar-Recorder/County Clerk</b>	<b>NO</b>	<b>N/A</b>	<b>NO</b>	<b>N/A</b>	<b>N/A</b>
<b>Sheriff</b>	<b>YES</b>	<b>Must be Microwavable/Hot Food/Liquids</b>	<b>YES</b>	<b>YES</b>	<b>NO</b>
<b>Treasurer And Tax Collector</b>	<b>NO</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>

# Appendix E: Plastic Recycling Chart

Many plastic containers manufactured today are stamped with symbols as an aid to recycling. These stamps identify the type of resin or resin mix in the plastic container. Only two types, PET and HDPE, are commonly collected for recycling.

Symbol	Acronym	Full name and uses
	PET	Polyethylene terephthalate - Fizzy drink bottles and frozen ready meal packages.
	HDPE	High-density polyethylene - Milk and washing-up liquid bottles
	PVC	Polyvinyl chloride - Food trays, cling film, bottles for squash, mineral water and shampoo.
	LDPE	Low density polyethylene - Carrier bags and bin liners.
	PP	Polypropylene - Margarine tubs, microwaveable meal trays.
	PS	Polystyrene - Yoghurt pots, foam meat or fish trays, hamburger boxes and egg cartons, vending cups, plastic cutlery, protective packaging for electronic goods and toys.
	Other	Any other plastics that do not fall into any of the above categories. For example melamine, often used in plastic plates and cups.

Appendix F:  
Banning of EPS  
Food Containers

Brochures

**What Resources are Available  
for  
Environmentally Acceptable  
Food Packaging?**

**National Distributors\***

- 1. Bay Brokerage Company, Inc.**  
1776 Laurel Street  
San Carlos, CA  
(650) 595-1189
- 2. Excellent Packaging and Supply**  
3220 Blume Drive, Suite 111  
Richmond, CA  
(510) 243-9501 or (800) 317-2737  
[www.excellentpackaging.com](http://www.excellentpackaging.com)
- 3. Good Humans**  
500 Soquel Ave. Suite F  
Santa Cruz, CA  
(866) 420-4208  
[www.goodhumans.com](http://www.goodhumans.com)
- 4. Green Earth Office Supply**  
PO Box 719  
Redwood Estates, CA  
(800) 327-8449  
[www.greenearthofficesupply.com](http://www.greenearthofficesupply.com)
- 5. GSD Packaging**  
1854 East Home  
Fresno, CA  
(559) 441-1181  
[West@GSDPackaging.com](mailto:West@GSDPackaging.com)  
[www.gsdpackaging.com](http://www.gsdpackaging.com)

- 6. Moresco Distributing**  
1120 Holm Road  
Petaluma, California  
(707) 843-0254  
[tomc@moresco.biz](mailto:tomc@moresco.biz)  
[www.moresco.biz](http://www.moresco.biz)
- 7. PAMS**  
3361 Pomona Blvd.  
Pomona, CA  
(909) 869-7267  
[www.pamsinc.com](http://www.pamsinc.com)
- 8. Sunlight Sales**  
11625 Overhill Drive  
Auburn, CA  
(530) 308-4116  
[www.sunlight.com](http://www.sunlight.com)
- 9. Tree Cycle**  
21555 Conifer Drive  
Huson, MT  
(406) 626-0200  
[www.treecycle.com](http://www.treecycle.com)
- 10. United Natural Foods  
Inc.**  
1101 Sunset Boulevard  
Rocklin, CA  
(916) 625-4100 or (800)  
679-8735  
[www.unfi.com](http://www.unfi.com)
- 11. World Centric**  
195 C Page Mill Rd  
Palo Alto, CA  
(650) 28303797  
[www.worldcentric.org](http://www.worldcentric.org)

- 12. Smart and Final**  
22631 Ventura Blvd.  
Woodland Hills, CA  
(818) 225-9590  
[www.smartandfinal.com](http://www.smartandfinal.com)

**Internet Distributors\***

- 1. Brenmarco Retail Store  
Supplier**  
(800) 783-7759  
[www.brenmarco.com](http://www.brenmarco.com)
- 2. Green Home**  
(877) 282-6400  
[www.greenhome.com](http://www.greenhome.com)
- 3. GreenLine**  
(800) 641-1117  
[www.greenlinepaper.com](http://www.greenlinepaper.com)
- 4. Recycline**  
[www.recycline.com](http://www.recycline.com)
- 5. Shop Natural**  
[www.shopnatural.com](http://www.shopnatural.com)
- 6. Simply Biodegradable**  
(509) 764-0233  
[www.simplybiodegradable.com](http://www.simplybiodegradable.com)
- 7. US Food Service**  
[www.usfoodservice.com](http://www.usfoodservice.com)



CITY of CALABASAS

**Environmentally  
Acceptable Food  
Packaging  
Ordinance**

**Ordinance No. 2007-233**

**Frequently Asked Questions**

**Starts March 31, 2008**  
Section 8.18.030

Public Works Department  
Environmental Services Division  
(818) 878-4225  
[www.cityofcalabasas.com/environment](http://www.cityofcalabasas.com/environment)

\* The City of Calabasas does not endorse the listed distributors. They are listed here as available resources.

## What Does the Ordinance Say?

1. Retail food establishments and nonprofit food providers in Calabasas may *no longer* use food packaging made of expanded polystyrene, known more commonly by the trademark name Styrofoam™, for prepared food, and must use environmentally acceptable food packaging.

### Compliance must begin by March 31, 2008

2. What does "environmentally acceptable food packaging" mean?

Packaging that is:

  - **Returnable**- food or beverage containers are capable of being returned to the distributor for reuse
  - **Recyclable**- material that can be recycled, salvaged, composted, processed, or marketed by any means other than land-filling or burning. Recyclable materials include plastic which can be feasibly recycled by a municipal recycling program in California. Such plastics have recycling symbols #1 through #5 and include PET or PETE, HDPE, LDPE, and PP plastics. Polystyrene bears the recycling symbol #6, but is not feasibly recyclable in Calabasas.

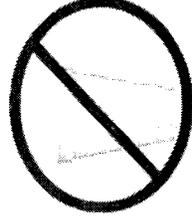
- **Biodegradable**- capable of being broken down by micro-organisms in the environment into non-toxic components within a reasonably short time after disposal
- **Degradable**- capable of being broken down through natural processes via natural organisms or ultraviolet light.

3. What does "prepared food" mean?

Food or beverages, which are served, packaged, cooked, chopped, sliced, mixed, brewed, frozen, squeezed or otherwise prepared for consumption by a retail consumer on the premises of a retail food establishment. Does not include raw, butchered meats, fish and/or poultry.

## 4. Annual Certification

After March 31, 2007 each retail food establishment in Calabasas must report their awareness of and compliance to the ordinance on the first business day of each calendar year via a written certification, signed under penalty of perjury, that is provided by the City.



## What Alternatives to Polystyrene Foam are Available?

- Uncoated paper
- Coated paper
- Cardboard
- Other plastics
- Aluminum foil food service ware
- "Bioplastics" made from corn, potato, and other plant materials
- Bagasse made from plant pulp, e.g. sugar cane

## What Resources are Available for Environmentally Acceptable Food Packaging?

### Local Distributors\*

1. **American Paper and Plastics CO.**  
Marty Flacks (local sales rep.)  
(626) 444-0000  
10511 E. Valley Blvd.  
El Monte, CA 91731  
[www.appinc.com](http://www.appinc.com)
2. **CaterGreen!**  
Allan and Herminia  
(323) 663-7747  
[Catergreen@eco-now.net](mailto:Catergreen@eco-now.net)  
[www.catergreen.com](http://www.catergreen.com)
3. **Smart and Final**  
22631 Ventura Blvd.  
Woodland Hills, CA 91364  
(818) 225-9590  
[www.smartandfinal.com](http://www.smartandfinal.com)

**Ordinance NO. 2007-233 (EPS Ban)  
Certification**

I, \_\_\_\_\_, owner/manager of  
(Print Name)

\_\_\_\_\_  
(Business name)

located at \_\_\_\_\_

certify that I received a copy of the City of Calabasas Ordinance No. 2007-233 and I am aware of the requirements that this ordinance entails and will comply to the ordinance by March 31, 2008.

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)

# Non-Recyclable Plastic Disposable Food Service Container Ban



## Frequently Asked Questions



### Background:

On January 9, 2007 the Santa Monica City Council unanimously voted to ban the use of non-recyclable plastic disposable food service containers within Santa Monica: [SMMC: 2216 \(pdf\)](#)

### When does the ordinance take effect?

- **February 9, 2007** for all city facilities and operations, city managed concessions, and city sponsored and permitted events.
- **February 9, 2008** for all food service providers in Santa Monica.

### Why did the City of Santa Monica ban non-recyclable plastic and polystyrene?

Expanded polystyrene and non-recyclable plastic together make up the largest amount of waste that ends up on Santa Monica's beaches. At the annual Coastal Cleanup Day, 10,000 volunteers came out to clean the beaches and in three hours picked up over 75,000 lbs. of trash, most of which was identified as Styro-foam® and plastic. This plastic waste causes significant environmental damage to the beach and marine environment. It can also harm marine animals and birds who mistake it for food. Polystyrene is made from crude oil and when improperly disposed persists in the environment for hundreds of years. By banning these types of disposable plastic food containers, the ordinance will help to reduce the amount of these materials that pollute Santa Monica's beaches and the bay.

### What are the banned food service containers?

Non-recyclable plastic refers to any plastic which cannot be feasibly recycled by a municipal recycling program in the State of California. This specifically refers to expanded polystyrene (also known as Styro-foam®) and clear or rigid polystyrene, both of which are marked with the symbol #6 on the bottom.

This ban applies to single-use disposable containers intended for serving or transporting prepared, ready-to-eat food or beverages. Examples include cups, plates, trays, bowls, and hinged or lidded containers. This ordinance does not apply to single-use disposable food service items which are not used as food containers, such as straws, cup lids and utensils.

### Who must comply with this ordinance?

This ordinance prohibits all food providers in the City of Santa Monica from dispensing prepared food in non-recyclable plastic food service containers. "Food provider" means any establishment, located or providing food within the City of Santa Monica, which provides prepared food for public consumption on or off its premises and includes without limitation any store, shop, sales outlet, restaurant, delicatessen, grocery store, super market, catering truck or vehicle, or any other person who provides prepared food, and any organization, group, or individual that regularly provides food as a part of its service. The ordinance also covers food containers purchased by city staff; food programs sponsored by the city, city-sponsored events, city-managed concessions and city-permitted events.

**What are the penalties for non-compliance?**

- The 1st violation results in a written warning.
- The 2nd violation results in a fine up to \$100.
- The 3rd violation & any following violations result in a daily fine up to \$250.

**What types of containers are allowed under the ordinance?**

- Aluminum
- Coated and uncoated paper
- Recyclable plastics
- Biodegradable products made from corn, sugar cane, bamboo, and other rapidly renewable resources.



**What is the heat tolerance of biodegradable products?**

When determining what type of biodegradable product line to use, it is important to know whether you will be serving hot or cold food. For example, a popular corn-based container has a heat tolerance of around 110 degrees F and is excellent for salads, sandwiches and cold drinks, but not hot foods or drinks. Specific brands of biodegradable food containers are designed for hot foods and drinks. Before you choose a container, be sure to ask for information on heat tolerance and other product specifications.

**Where do I find acceptable food service containers?**

Contact or visit your sales representative to inquire about acceptable containers. If they do not carry them, request that they begin doing so. As a service to the community, the city will provide a list of suppliers of acceptable food service containers. See list of local food service container distributors at [www.smepd.org/container](http://www.smepd.org/container).

**Who can I call for questions about where to find alternative products, ordinance enforcement, exemptions, recycling technical assistance or community presentations?**

Contact Josephine Miller of the Environmental Programs Division at 310-458-4925 or [josephine.miller@smgov.net](mailto:josephine.miller@smgov.net).

City of Santa Monica  
Environmental Programs Division  
200 Santa Monica Pier  
Santa Monica, CA 90401  
Phone: 310.458.2213  
Email: [environment@smgov.net](mailto:environment@smgov.net)  
Website: [www.smepd.org/container](http://www.smepd.org/container)



# Success Stories

Leaders in Providing Sustainable Take Out Food Services for Santa Monica



Santa Monica is famous for excellent food, and now, excellent take-out food containers. With over 600 food related businesses, Santa Monica now stands with several other leading cities in banning Styrofoam® and other non-recyclable plastics due to their inability to breakdown in the marine environment.

Eat well and protect our valuable natural resources—support the leaders, and become a leader. To learn more, visit us on the web at [www.smepd.org/container](http://www.smepd.org/container).



City of Santa Monica  
Environmental Programs Division  
200 Santa Monica Pier  
Santa Monica, CA 90401  
Phone: 310.458.4925  
Email: [environment@smgov.net](mailto:environment@smgov.net)  
Website: [www.smepd.org/container](http://www.smepd.org/container)



# Container Successes

## **Zabies**

Compostable Bioplastic Clear Cups made from Corn  
Compostable Paper Cups w/ Cardboard Sleeve  
Compostable Paper To-Go Containers



## **Library AleHouse**

Compostable Cutlery made from Potato Starch  
Compostable Bagasse To-Go Containers with lids or clamshells made from sugarcane fiber waste.  
Compostable Bioplastic Clear Cups made from Corn



## **Border Grill**

Compostable Paper Cups & To-Go Containers with Corn based lining  
Compostable Bioplastic Clear Cups and To-Go Clamshell & Sauce Containers made from Corn  
Compostable Cutlery made from Potato Starch



## **Ocean Park Café**

Aluminum To-Go Containers with cardboard lids  
Compostable Paper Cups  
Compostable Paper Cups w/ Cardboard Sleeves



## **Santa Monica Airport**

Compostable Coated Paper Cups  
Compostable Paper Plates & Bowls  
Compostable 100% Post-Consumer Waste Napkins





**City of Santa Monica**  
**Distributors of Biodegradable and Recyclable**  
**Food Service Containers**



Advisory: All of the companies below sell biodegradable and recyclable products as well as non-recyclable products. Be sure to specify "biodegradable and recyclable." If you would like to suggest additions or corrections, please call the Environmental Programs Division at 310.458.4925 or visit us at [www.smeprd.org](http://www.smeprd.org).

Distributors	Website	Contact	Phone
American Paper and Plastics, Inc.	<a href="http://www.appinc.com">www.appinc.com</a>	Steven Silver	310.409.5076
BioCorp	<a href="http://www.biocorpaavc.com">www.biocorpaavc.com</a>	Kelly Lehmann	800.348.8348
Biodegradable Food Service LLC	<a href="http://www.biodegradablefoodservice.com">www.biodegradablefoodservice.com</a>	Kevin Duffy	541.593.2191
BioPak-GSD Packaging	<a href="http://www.gsdpackaging.com">www.gsdpackaging.com</a>	Jim Keitges	559.441.1181
California Recycles, Inc.	<a href="http://www.californiarecycles.com">www.californiarecycles.com</a>	Eiham Ebiza	310.478.3001 x101
Cater Green	<a href="http://www.catergreen.com">www.catergreen.com</a>	Allan Haskell	323.663.7747
EarthSmart LLC	<a href="http://www.earthsmartllc.com">www.earthsmartllc.com</a>	Wes Cradock	480.206.4513
Eco Products	<a href="http://www.ecoproducts.com">www.ecoproducts.com</a>	Order online	303.449.1876
Excellent Packaging and Supply	<a href="http://www.excellentpackaging.com">www.excellentpackaging.com</a>	Steve Levine	800.317.2737
Giancola Brothers, Inc.	<a href="mailto:giancolabrosinc@gmail.com">giancolabrosinc@gmail.com</a>	Jennifer Giancola	310-450-1464
Green Earth Office Supply	<a href="http://store.yahoo.com/greenearthofficesupply/">http://store.yahoo.com/greenearthofficesupply/</a>	Order online	800.327.8449
Green Wave by Western Pacific Assoc.	<a href="http://greenwave.us.com/">http://greenwave.us.com/</a>	Joe Battung	562.208.6695
The Individual Group	<a href="http://www.theindgrp.com">www.theindgrp.com</a>	Richard Zionts	323.981.2800
Pak West Paper	<a href="http://www.pakwest.com">www.pakwest.com</a>	Chris Smith	714.481.3846
Paper Company	<a href="http://www.thepapercompany.net">www.thepapercompany.net</a>	Mike Madden	714.444.2171
P & R Paper Supply	<a href="http://www.prpaper.com/">www.prpaper.com/</a>	Dionne Marie Stewart	951.316.7800
Recyclaholics	<a href="http://recyclaholics.com/foodservice.htm">http://recyclaholics.com/foodservice.htm</a>	Order online	612.521.5667
Renewable Products	<a href="http://www.renewable-products.com/">http://www.renewable-products.com/</a>	Bob Pondo	612.521.5667
Smart and Final - Venice	<a href="http://www.smartandfinal.com">www.smartandfinal.com</a>	Enrique Perez	310.392.4954
Smart and Final - W. Los Angeles	<a href="http://www.smartandfinal.com">www.smartandfinal.com</a>	Evan Howell	310.473.0344
Stalk Market	<a href="http://www.stalkmarket.net">www.stalkmarket.net</a>	Order online	503.295.4977
Sysco Food Service	<a href="http://www.sysco.com">www.sysco.com</a>	Phillip Waring	800.800.1199 x3039
Trade Supplies	<a href="http://www.tradesuppliesinc.com">www.tradesuppliesinc.com</a>	Aaron Fishbain	323.581.3250
US Food	<a href="http://www.usfood.com">www.usfood.com</a>	Miriam Corver	800.379.5633 x6147
WorldCentric Store	<a href="http://www.worldcentric.org/store/index.htm">www.worldcentric.org/store/index.htm</a>	Order online	650.283.3797

Disclaimer: Reference to any commercial business, organization, or product does not constitute nor imply endorsement or recommendation.

Last updated 11.27.07

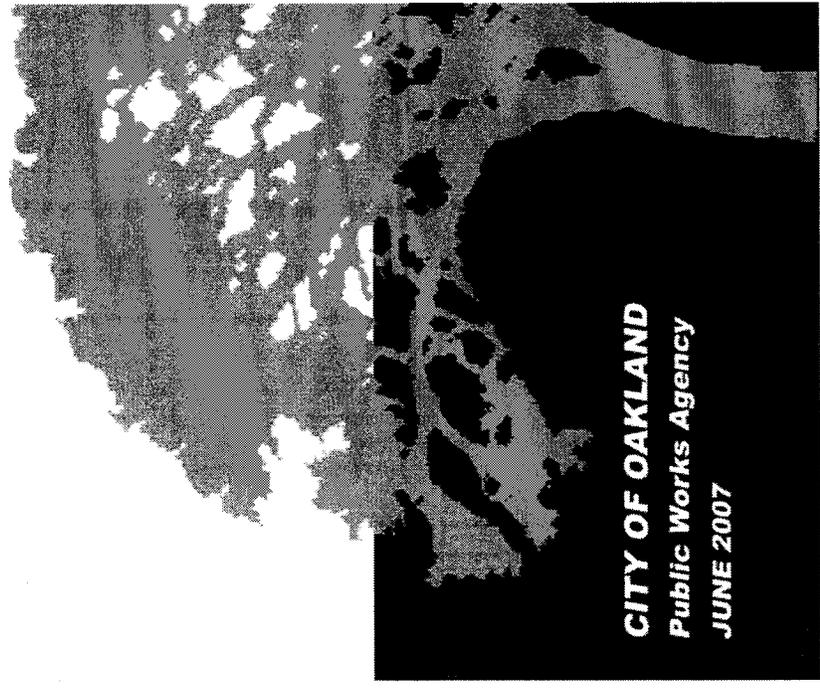
Polystyrene Foam Food Service Ware  
Oakland Municipal Code section 8.07

Food service ware contributes to litter and blight on our streets, in our creeks throughout Oakland, and in the Bay.

According to the EPA, FDA and OSHA, many food service ware products made from polystyrene foam may be hazardous to our health.

To make our city cleaner and healthier and help our community achieve zero waste, Oakland has passed a disposable food packaging ordinance.

# A Guide For Oakland Food Vendors



**CITY OF OAKLAND**  
Public Works Agency  
JUNE 2007



City of Oakland  
Public Works Agency  
Environmental Services Division  
250 Frank Ogawa Plaza, Suite 5301  
Oakland, CA 94612

This information is provided by the City of Oakland  
Public Works Agency Recycling Program  
(510) 238-SAVE (7283)  
[www.oaklandrecycles.com](http://www.oaklandrecycles.com)

中文: (510) 614-5495  
Español: (510) 614-5496  
Tiếng Việt: (510) 614-5497



## WHAT YOU NEED TO KNOW

Effective January 1, 2007, Oakland food vendors may not use polystyrene foam (Styrofoam®) disposable foodservice ware.

In Addition, Oakland food vendors and restaurants must change to biodegradable/compostable disposable food service ware such as paper or "bioplastic", as it becomes affordable (same or lower cost).

Disposable food service ware includes all containers, bowls, plates, trays, cartons, cups, lids, straws, forks, spoons, knives and other items that are designed for one-time use that any restaurant or retail food vendor uses to serve or package food to go.

All Oakland food vendors selling prepared food, including restaurants, delis fast-food restaurants, vendors at fairs, food trucks, and all City Facilities must comply.

## RESOURCES TO HELP YOU MEET CITY REQUIREMENTS

- ◆ Ask your current supplier about products that meet the City's new requirements for to-go containers
- ◆ Visit [www.oaklandgreenware.com](http://www.oaklandgreenware.com) for a list of suppliers
- ◆ Call **238-SAVE** with your questions about the ordinance

## FREQUENTLY ASKED QUESTIONS

**What are the alternatives to polystyrene foam?**  
Uncoated paper, coated paper, cardboard, other plastics, aluminum foil foodservice ware, and "bioplastics" are good alternatives.

**What are biodegradable and compostable foodservice ware products?** Uncoated paper products, coated paper products, and "bio plastics" made from corn, potato, and other plant materials.

**Are there exceptions to these requirements?**  
There is no exception to the prohibition of polystyrene foam. Non-compostable and non-biodegradable products may be used if a vendor can show that no alternative exists at the same or lower cost.

## PENALTIES

The City will investigate all reported violations. Food Vendors found in violation of the ordinance will be subject to the following fines:

- 1st offense = Warning
- 2nd offense = \$100 fine
- 3rd offense = \$200 fine
- 4th offense = \$500 fine

## OTHER TIPS

- ◆ Allow customers to bring their own mugs when purchasing drinks.
- ◆ Charge a take-out fee for approved to-go containers that cost more.
- ◆ Use reusable dishes for dine-in customers.

Polystyrene is made from petroleum, and it is non-renewable, non-biodegradable, and virtually non-recyclable. It ends up in landfills, waterways and the ocean. It breaks down into smaller pieces which are often mistaken for food and ingested by marine mammals, birds and fish. The EPA, FDA and OSHA suggest that chemicals in polystyrene foam are carcinogenic and may leach into food and drink.



Disposable Food Service Ware  
To-go containers

## Frequently Asked Questions

# Greenware Ordinance

STARTS JANUARY 1, 2007  
Oakland Municipal Code Section 8.07

### **Who has to follow the Ordinance?**

All Oakland food vendors selling prepared food including restaurants, delis, fast-food establishments, vendors at fairs, and food trucks. All City Facilities.

### **What are alternatives to polystyrene foam?**

Uncoated paper, coated paper, cardboard, other plastics, aluminum foil food service ware, and "bio-plastics" are all permitted by this ordinance.

### **What are biodegradable and compostable food ware products?**

Uncoated paper products, coated paper products, and some "bio-plastics" (made from corn, potato, and other plant materials).

### **What is wrong with polystyrene foam?**

Made from crude oil, it is non-renewable, non-biodegradable, and virtually non-recyclable. It ends up in landfills, waterways or the ocean. It breaks down into smaller and smaller pieces which are often mistaken for food and ingested by marine mammals, birds, and fish. Medical evidence also suggests that chemicals in poly-styrene foam are carcinogenic and may leach into food or drink.

### **Are there exceptions to these requirements?**

There is no exception to the prohibition of polystyrene foam. Non-compostable and non-biodegradable products may be used if vendor can show that no alternative exists at the same or lower cost.

### **What are the penalties for non-compliance?**

Violations will result in fines: 1st = warning, 2nd = \$100, 3rd = \$200, 4th = \$500  
Enforcement is by the City of Oakland, not the County Health Inspector. Enforcement is complaint-driven, meaning *your customers* may notify the City of violations.

### **What else can my business do to reduce food service ware waste?**

You can allow customers to bring their own mugs to buy drinks. In instances that food vendors wish to use a biodegradable or compostable product that is not the same or less cost than the non biodegradable or compostable alternative, a food vendor may charge a "take out fee" to cover the cost difference. You can use reusable dishes and cups instead of disposable ones for "eat-in" customers. You can use organics recycling service at your business to turn food packaging waste into compost.

### **How can my business get food scraps recycling?**

Call the City of Oakland Recycling Hotline at **238-SAVE (7283)** for assistance with any of your business recycling needs.

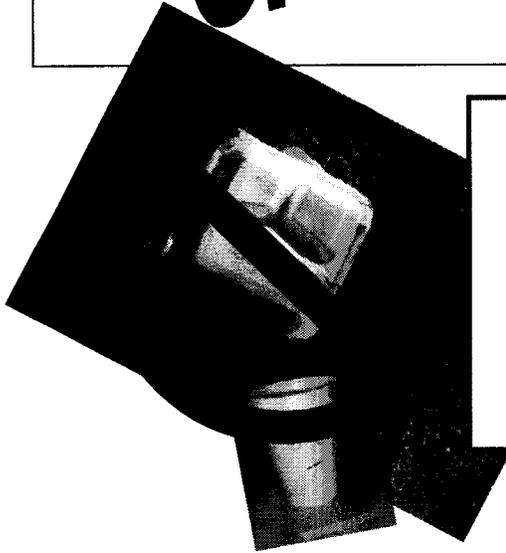
Disposable Food Service Ware  
To-go containers

## WHAT YOU NEED TO KNOW

CITY OF  
OAKLAND

# Greenware Ordinance

STARTS JANUARY 1, 2007  
Oakland Municipal Code Section 8.07



1

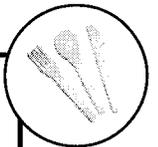
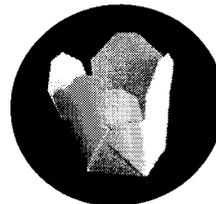
Oakland food vendors/restaurants may no longer use polystyrene foam (Styrofoam®) disposable food service ware. Violations may result in fines. (See back.)

2

Oakland food vendors and restaurants must change to biodegradable/compostable disposable food service ware such as paper or "bio-plastic", as it becomes affordable (same or less cost).

### Resources to Help You Meet City Requirements:

- ✓ Ask your current supplier about products that meet the City's new requirements for food service ware.
- ✓ Call the City of Oakland Recycling Hotline at **238-SAVE** (7283) for a list of biodegradable food service ware suppliers, or for any questions related to this ordinance.
- ✓ Visit [oaklandgreenware.com](http://oaklandgreenware.com) for more suppliers and information.



Para recibir más información en español llame al 238-6812.  
自行車道提案提出寶貴意見。如需獲得更多中文資訊，或有任何建議，請致電：238-6812。

Để biết thêm chi tiết bằng tiếng Việt về đề nghị Xếp 1, xin gọi số  
238-6812.

Food service ware is a large contributor to litter, blight and waste throughout Oakland. In addition, many food service ware products made from plastic may be hazardous to our health. To make our city cleaner and healthier and help our community achieve zero waste, Oakland has passed a disposable food packaging ordinance. Similar ordinances are now being adopted across California.

See reverse for exceptions and more information.



**Disposable Food Service Ware  
To-go containers**

# DISTRIBUTOR LIST

**CITY OF  
OAKLAND**

# Greenware Ordinance

**STARTS JANUARY 1, 2007**  
Oakland Municipal Code Section 8.07

**Food Vendors:** Ask your distributor for compostable alternatives to foam and plastic!  
**Customers:** Share this flyer with Oakland food vendors you patronize!

## Local Distributors

### **Access Group**

14470 Doolittle Drive,  
San Leandro, CA  
(510) 567-1000  
[www.accessgroupnca.com](http://www.accessgroupnca.com)

### **C & J CO**

105 Jackson Street  
Oakland, CA  
(510) 663-0188

### **Cash & Carry**

400 Oak Street  
Oakland, CA  
(510) 251-9344

### **Costco**

Richmond: 4801 Central Avenue  
(510) 898-2003  
San Leandro: 1900 Davis Street  
(510) 562-6708

### **Excellent Packaging and Supply**

3220 Blume Drive, Suite 111  
Richmond, CA  
(510) 243-9501 or (800) 317-2737  
[www.excellentpackaging.com](http://www.excellentpackaging.com)

### **Jetro Cash n Carry**

105 Embarcadero  
Oakland, CA  
(510) 628-0600

### **Smart & Final**

901-933 Broadway  
Oakland, CA  
(510) 251-8221  
1243 42nd Ave.  
Oakland, CA  
(510) 536-7494

### **SYSCO**

(800) 877-7012

## National Distributors

### **Bay Brokerage Company, Inc.**

1776 Laurel Street  
San Carlos, CA  
(650) 595-1189

### **Good Humans**

500 Soquel Ave. Suite F  
Santa Cruz, CA  
(866) 420-4208  
[www.goodhumans.com](http://www.goodhumans.com)

### **Green Earth Office Supply**

PO Box 719  
Redwood Estates, CA  
(800) 327-8449  
[www.greenearthofficesupply.com](http://www.greenearthofficesupply.com)

### **GSD Packaging**

1854 East Home  
Fresno, CA  
(559) 441-1181  
[West@GSDPackaging.com](mailto:West@GSDPackaging.com)  
[www.gsdpackaging.com](http://www.gsdpackaging.com)

### **Moresco Distributing**

1120 Holm Road  
Petaluma, California  
(707) 843-0254  
[tomc@moresco.biz](mailto:tomc@moresco.biz)  
[www.moresco.biz](http://www.moresco.biz)

### **PAMS**

3361 Pomona Blvd.  
Pomona, CA  
(909) 869-7267  
[www.pamsinc.com](http://www.pamsinc.com)

### **Sunlight Sales**

11625 Overhill Drive  
Auburn, CA  
(530) 308-4116  
[www.sunlight.com](http://www.sunlight.com)

### **Tree Cycle**

21555 Conifer Drive  
Huson, MT  
(406) 626-0200  
[www.treecycle.com](http://www.treecycle.com)

### **United Natural Foods Inc**

1101 Sunset Boulevard  
Rocklin, CA  
(916) 625-4100 or (800) 679-8735  
[www.unfi.com](http://www.unfi.com)

### **World Centric**

195 C Page Mill Rd  
Palo Alto, CA  
(650) 28303797  
[www.worldcentric.org](http://www.worldcentric.org)

## Internet Distributors

### **American Paper & Plastics**

[www.appinc.com](http://www.appinc.com)

### **Brenmarco Retail Store Supplier**

(800) 783-7759  
[www.brenmarco.com](http://www.brenmarco.com)

### **Green Home**

(877) 282-6400  
[www.greenhome.com](http://www.greenhome.com)

### **GreenLine**

(800) 641-1117  
[www.greenlinepaper.com](http://www.greenlinepaper.com)

### **Recycline**

[www.recycline.com](http://www.recycline.com)

### **Shop Natural**

[www.shopnatural.com](http://www.shopnatural.com)

### **Simply Biodegradable**

(509) 764-0233  
[www.simplybiodegradable.com](http://www.simplybiodegradable.com)

### **US Food Service**

[www.usfoodservice.com](http://www.usfoodservice.com)

Advisory: Check with distributors for specific prices or specifications, and feasibility of products for specific applications. If you'd like to suggest additions or corrections, please email us at [partnership@stopwaste.org](mailto:partnership@stopwaste.org).

**Certification Status**

**Material Type**

Item	BPI-certified Product Manufacturers	Other Product Manufacturers	PLA and/or Materiel	Derived Starch (e.g. Potato)	Sugar Cane (e.g. Baggasse) or other Fibre	Other (e.g. Paper, Metal)
hot cups		Sinless Buying			Sinless Buying	
cold cups	Fabrikal, Cereplast, Huhtamaki	Sinless Buying	Fabrikal, Cereplast		Huhtamaki, Sinless Buying	
cutlery	Cereplast	Earthware, Spudware, Sinless Buying	Cereplast	Earthware, Spudware	Sinless Buying	Earthware (wheat), Spudware
plates	Cereplast	Earthshell, Asean, Huhtamaki, EatitWorld, Sinless Buying	Cereplast	Earthshell	Asean, Huhtamaki, EatitWorld, Sinless Buying	
bowls	Cereplast	Earthshell, Asean, Huhtamaki, EatitWorld, Sinless Buying	Cereplast	Earthshell	Asean, Huhtamaki, EatitWorld, Sinless Buying	
to-go		Earthshell, Sinless Buying		Earthshell	Sinless Buying	
straws	Cereplast		Cereplast			
trays	BioSphere	Sinless Buying		BioSphere	Sinless Buying	
cake and pie shells		NaturesPLastic	NaturesPLastic			
bags	BioBag, Cereplast, EcoFilm, Farmell, Heritage, BioSak, Comp-Lete		BioBag, Cereplast, BioSak, Comp-Lete			Bio-Bag
water bottles	Biota Springs Water		Biota Springs Water			

\* BPI is the Biodegradable Products Institute. They are the main U.S. certification agency for compostable products. [www.bpiworld.org](http://www.bpiworld.org).

Disclaimer: Reference to any commercial business, organization, or product does not constitute nor imply endorsement or recommendation. StopWaste.Org makes every effort to present accurate and reliable information but errors do occur.



## New Law Promotes Healthier San Francisco and Can Improve the Bottom-Line for Restaurants and Food Vendors

**Effective June 1, 2007, food vendors and restaurants in San Francisco must use compostable or recyclable to-go containers. Polystyrene foam (Styrofoam™) disposable food service ware can no longer be used for food prepared in San Francisco.**

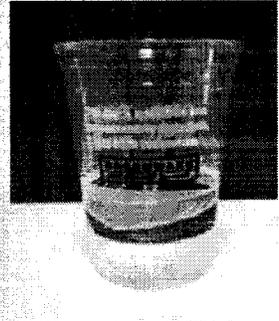
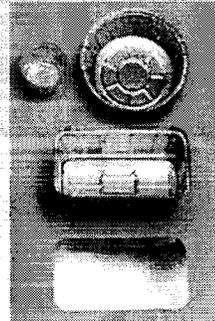


There are many food service ware alternatives that can be composted or recycled by businesses or residents that can help reduce their trash volumes and service costs. Thousands of San Francisco restaurants and other businesses are recycling and participating in the food scrap and compostables collection program and as a result are getting discounts of up to 75% off their garbage service costs. Residents also have access to composting

and recycling collection services and can put compostable or recyclable food service ware in their green or blue carts.

San Francisco Department of the Environment (SF Environment) is available to assist businesses with finding suitable food service ware and can provide on-site training and assistance to participate in the recycling and food scrap and compostables collection programs.

### Examples of Acceptable Food Service Ware:



For more information or to request assistance, visit [SFEnvironment.org/foodservice](http://SFEnvironment.org/foodservice) or call **(415) 355-3700**, or **City's Customer Service 3-1-1**

**SFEnvironment Our home. Our city. Our planet.** SF Environment is a department of the City and County of San Francisco.

# What You Need To Know About New Food Service Ware Law

## What are the requirements of the new food service ware law?

- San Francisco food vendors are prohibited from using polystyrene foam, otherwise known as Styrofoam™, food service ware for food prepared and served in San Francisco, with no exceptions.
- All other disposable food service ware for food prepared and served in San Francisco, must be compostable or recyclable unless there is no suitable product that is within 15% of the cost of non-compostable or non-recyclable alternatives. (There is no cost exemption for Styrofoam™).

## Who has to follow the new food service ware law?

All San Francisco food vendors selling food prepared and served in San Francisco must use compostable or recyclable food service ware. Restaurants, delis, fast food establishments, vendors at fairs, food trucks, and all City facilities and contractors must follow this law.

## What are the penalties for non-compliance?

Violations may result in fines: 1st time = warning, 2nd time = \$100, 3rd time = \$200, 4th or more time = \$500. Enforcement is by the City administrator and will be in part complaint-driven, meaning your customers may notify the City of violations, by calling (415) 554-4851.

## What is wrong with polystyrene foam (Styrofoam™)?

Made from oil, polystyrene foam is non-renewable, non-biodegradable, and non-recyclable. Polystyrene foam food service ware ends up in landfills, waterways or the ocean. It can break into pieces, which are often mistaken for food and ingested by marine animals, birds, and fish. Medical studies suggest that chemicals in polystyrene foam can cause cancer and can leach into food or drinks.

## What are approved food service ware products?

### Compostable products include:

- Paper or other plant fiber, such as from sugarcane, rice, or bamboo. Polyethylene film coating on paper is currently accepted, but not any foam coating.
- Corn, soy, potato or other plant starch based bio-plastics, such as "PLA" clear plastic, that are labeled as "compostable" and meet compostability standards (ASTM D6400). These products should be marked with a green band, stripe or sticker to allow compostable identification by the compostables collector and processor.

These products are described at [SFEnvironment.org/foodservice](http://SFEnvironment.org/foodservice) or call (415) 355-3700 to request product list.

### Recyclable products include:

- Aluminum foil or trays and ,  and  plastic containers and lids.

## Where can alternative food service ware products be purchased?

Ask your current supplier about products that meet the City's new requirements. Suppliers for compostable and recyclable products can be found at [SFEnvironment.org/foodservice](http://SFEnvironment.org/foodservice) or call (415) 355-3700 to request list of suppliers.

## What can you do to reduce food service ware waste?

- Allow and encourage customers to bring their own mugs or reusable to-go containers for take-out use and offer a discount when customers bring their own food service ware.
- Charge customers a fee to cover any additional costs for disposable take-out containers.
- Use reusable service ware instead of disposable ones for eat-in customers.

**Compostable or Recyclable Food Service Ware Accepted in San Francisco under the Food Service Waste Reduction Ordinance**

Product Categories*	Product Brands (Manufacturer)	Product Material/Resins (colors)	Meets ASTM-Standards for Compostability**	OK for Composting Collection	OK for Recycling Collection
<b>Hinged Containers</b> (one piece square or rectangular clamshell one or more compartments)	BagasseWare, BioCane, Bridgegate, Stalkmarket,	Paper and/or plant fiber, such as sugarcane (bagasse), rice or bamboo (brown, white, offwhite)	Paper & plant fiber accepted without testing for ASTM Standards.	YES	NO
	The Harvest Collection (Genpak)	Corn, soy, wheat and/or potato starch based bio-plastic (offwhite)	Resin must meet ASTM-Standards for compostability. Cereplast resin has been certified (by BPI) to meet these standards.	YES - with green color label or sticker	NO
	NaturesPLastic & Natureworks PLA (Wilkinson), Nature Green PLA	Corn starch based "PLA" bio-plastic (clear)	Resin must meet ASTM-Standards for compostability. PLA resin has been certified (by BPI) to meet these standards.	YES - with green color label or sticker	NO
	BagasseWare, BioCane, Bridgegate, EATware, Stalkmarket,	Paper and/or plant fiber, such as sugarcane (bagasse), rice or bamboo (brown, white, offwhite)	Paper & plant fiber accepted without testing for ASTM Standards.	YES	NO
<b>Lidded Containers</b> (two piece square or rectangular one or more compartments or round tub single compartment)	NaturesPLastic & Natureworks PLA (Wilkinson), Nature Green PLA	Corn starch based "PLA" bio-plastic (clear)	Resin must meet ASTM-Standards for compostability. PLA resin has been certified (by BPI) to meet these standards.	YES - with green label or sticker on each piece	NO
	!	Aluminum	NO	NO	YES
<b>Folded Containers</b> (one piece square or rectangular single compartment)	FastPac (Sabert)	#2 (HDPE), #4 (LDPE), or #5 (PP) resin plastic (clear)	NO	NO	YES - with #2, #4 or #5 on each piece
	Biopak, Bioplus, ChampPak, Micropail	Paper and/or plant fiber, such as sugarcane (bagasse), rice or bamboo (brown, white, offwhite)	Paper & plant fiber accepted without testing for ASTM Standards.	YES	NO
<b>Plates or Trays</b> (one or more compartments some with cup holders)	BagasseWare, BioCane, Chinet (Huhtamaki), EATware	Paper and/or plant fiber, such as sugarcane (bagasse), rice or bamboo (brown, white, offwhite)	Paper & plant fiber accepted without testing for ASTM Standards.	YES	NO
		Aluminum	NO	NO	YES
	The Harvest Collection (Genpak)	Corn, soy, wheat &/or potato starch based bio-plastic (offwhite)	Resin must meet ASTM-Standards for compostability. Cereplast resin has been certified (by BPI) to meet these standards.	YES - with green color label or sticker	NO

\* Categories not listed are exempted until added when available. No exceptions for polystyrene foam ban.

\*\*Polyethylene film (not foam) coating on paper is currently accepted for composting and exempted from ASTM-Standards for compostability.

Product Categories*	Product Brands (Manufacturer)	Product Material/Resins (colors)	Meets ASTM-Standards for Compostability**	OK for Composting Collection	OK for Recycling Collection
<b>Bowls</b>	BagasseWare,	Paper and/or plant fiber, such as sugarcane (bagasse), rice or bamboo (brown, white, offwhite)	Paper & plant fiber/pulp accepted without ASTM tests.	YES	NO
	The Harvest Collection (Genpak)	Corn, soy, wheat &/or potato starch based bio-plastic (offwhite)	Resin must meet ASTM-Standards for compostability. Cereplast resin has been certified (by BPI) to meet these standards.	YES - with green color label or sticker	NO
<b>Hot Cups</b>	Ecotainer (International Paper)	Paper lined with corn starch "PLA" (white w/ green design)	Ecotainer certified by BPI to meet ASTM-Standards.	YES	NO
	Stalkmarket, (Huhnamaki)	Paper and/or plant fiber, such as sugarcane (bagasse), rice or bamboo (brown, white, offwhite)	Paper & plant fiber/pulp accepted without ASTM tests.	YES	NO
<b>Cold Cups &amp; Lids</b>	Greenware (Fabrikal)	Corn starch based "PLA" bio-plastic (opaque, offwhite, green)	Resin must meet ASTM-Standards for compostability. PLA resin has been certified (by BPI) to meet these standards.	YES - with green color label or sticker	NO
	The Harvest Collection (Genpak)	Corn, soy, wheat &/or potato starch bio-plastic (offwhite)	Resin must meet ASTM-Standards for compostability. Cereplast resin has been certified (by BPI) to meet these standards.	YES - with green color label or sticker	NO
		#2 (HDPE), #4 (LDPE), or #5 (PP) resin plastic (clear)	NO	NO	YES - with #2, #4 or #5 on each piece
<b>Cutlery</b>		Corn starch based "PLA" bio-plastic (opaque, offwhite, green) or other corn, soy, wheat &/or potato starch bio-plastic (offwhite)	Resin must meet ASTM-Standards for compostability. PLA resin has been certified (by BPI) to meet these standards.	YES - if green or other distinct color from non-compostables	NO
	Nat-Ur (Cereplast)	Paper, cellophane or other plant fiber	Paper & plant fiber accepted without testing for ASTM Standards.	YES	NO (If food soiled)
<b>Wraps</b>	Natureflex	Corn starch based bio-plastic (opaque, offwhite)	Resin must meet ASTM-Standards for compostability. PLA resin has been certified (by BPI) to meet these standards.	YES - with green color label or sticker	NO
		Aluminum foil		NO	YES
<b>Straws or Stirrers</b>		Paper or other plant fiber, such as wood stirrers	Paper & plant fiber accepted without testing for ASTM Standards.	YES	NO (If food soiled)
		Corn starch based "PLA" bio-plastic (clear, various colors)	Resin must meet ASTM-Standards for compostability. PLA resin has been certified (by BPI) to meet these standards.	YES - with green color label or sticker	NO
<b>Napkins</b>		Paper or other plant fiber	Paper & plant fiber accepted without testing for ASTM Standards.	YES	NO (If food soiled)

\* Categories not listed are exempted until added when available. No exceptions for polystyrene foam ban.

\*\*Polyethylene film (not foam) coating on paper is currently accepted for composting and exempted from ASTM-Standards for compostability.

# Distributors of Compostable or Recyclable Food Ware



**SF Environment**

**Our home. Our city. Our planet.**  
 SFEnvironment.org • (415) 355-3700  
 A Department of the City and County of San Francisco

Distributors	Contact & Phone	Email	Website	dell containers, pie shells, salad bowls	to-go containers, clamshells	hot cups / lids	cold cups & lids	cutlery	plates	bowls	straws	trays	bags
Access Group	Chris Matson (510) 567-1000	CMatson@accessgroupnca.com	http://naturesplastic.wilkinsonindustries.com/	PLA	PLA	PLA	PLA		B,P	B,P		A,PLA	YES
American Paper & Plastic Inc	Larry Morris (877) 255-7198 (626) 444-0000	larry@appinc.com, info@appinc.com	www.appinc.com	A, PLA	A, PLA	P, EP	PLA	C	P,B	P, B	C	A, P	YES
Biodegradable FoodService	Kevin Duffy (541) 593-2191 (503)810-5707	kevinD@bdfs.net	www.bdfs.net	B, PLA	PLA, B	P,B, PO, BA	PLA, BA	PO, BA	B, BA	B, BA		B, PO, BA	YES
BiRite	Robert Durkin 415-656-0187 x331	durkin@BiRite.com	www.BiRite.com	P, PLA	P, PLA	P	PLA	yes	P	P			
Cash & Carry	Mario Gavidia (415) 836-9296	cc570@smartandfinal.com	http://www.smartandfinal.com/	P, PLA	PLA, P	P			P	P		P	
Cereplast	Michael Muchin (310) 676-5000	mmuchin@cereplast.com	www.cereplast.com	C	C		C	PLA	C	C			
Costco	Shirley P. Cen (415) 626-4388	w144mbr@costco.com	www.costco.com	P	P	P	P		P	P			
Eco-Products	Luke Vernon (303) 449-1876	lvemon@ecoproducts.com	biodegradablestore.com	PLA, B	PLA, B	P, EP	PLA	PO, C	P, B,	B		B, P	YES
Excellent Packaging and Supply	Allen King (800) 317-2737	allen@excellentpackaging.com	www.excellentpackaging.com	PLA, B, P	PLA, B	B, EP	PLA	PO	B	B,	EP	PLA	YES
Huhtamaki	Sally Chouprov (650) 344-3605	sally.chouprov@us.huhtamaki.com	www.us.huhtamaki.com	P	P	P	P		P	P		P	
Genpak	Michael Muchin (310) 676-5000	mmuchin@cereplast.com	harvestcollection.genpak.com/products.cfm	C	C		C		C	C			
Green Earth Office Supply	Andrea Wilson (800) 327-8449	andrea@greenearthofficesupply.com	greenearthofficesupply.storage.yahoo.net/furniture.html	P, B, PLA	P, B, PLA	B, EP	PLA	PO, C	P, B	B	PLA	PLA	YES

PLA=clear plastic corn based, C=non-clear plastic corn, wheat or rice based, B=bagasse (sugarcane fiber), BA= bamboo fiber, PO=non-clear plastic potato based, P=paper fiber (poly-coated OK), EP= PLA coated paper cup (Ecocontainer)

Distributors	Contact & Phone	Email	Website	deli containers, pie shells, salad bowls	to-go containers, clamshells	hot cups / lids	cold cups & lids	cutlery	plates	bowls	straws	trays	bags
Green is Green, Inc	Anders (415) 215-8553	anders@greenisgreeninc.com	<a href="http://www.greenisgreeninc.com/GiG-product%20list.pdf">http://www.greenisgreeninc.com/GiG-product%20list.pdf</a>	B, PLA	B, PLA	B	PLA	PO	B	B	C	B	YES
Maple Trade Corporation	Sam Ha (650) 296-8998	sales@mapletradecorp.com	<a href="http://www.mapletradecorp.com">www.mapletradecorp.com</a>	plastic #5	plastic #5								
Pan Pacific Export & Import	Ali Akbar (510) 582-4893 (510) 582-4817	ali710412@aol.com	<a href="http://www.waterfromfiji.com">www.waterfromfiji.com</a> (click Protect the Earth)	B	B		B		B	B		B	
Prime Link Solutions	Alan Ko (650) 375-1398	alan@primelinksolutions.com		B	B				B	B		B	
PPT Brothers	Raymond Tam (415) 430-7030	rpm48@hotmail.com		plastic #5	plastic #5								
Rainbow Grocery	Laura Kemp (415) 863-0620		<a href="http://rainbowgrocery.org">rainbowgrocery.org</a>				B	C	B	B			YES
Restaurant Depot	(415) 920-2888	manager.045@jetrorid.com	<a href="http://www.restaurantdepot.com">www.restaurantdepot.com</a>	P, PLA	P, PLA	P	P		P				
S.F. Supply Master	(415) 642-0700	shah@sfsupplymaster.com		P	P	P, EP	PLA		P, B	P, B	P		
Simply Biodegradable	Brad Price (509)764-0233 (509)910-1430	brad@simplybiodegradable.com	<a href="http://www.simplybiodegradable.com">www.simplybiodegradable.com</a>	B, PLA	B, PLA	B	PLA	C	B	B		B	YES
Smart and Final	(800) 894-0511		<a href="http://www.smartandfinal.com">http://www.smartandfinal.com</a>	PLA	PLA	P	PLA		P,				
Sysco Food Services	Jeremy Jacobs (510) 226.3425	Jacobs.Jeremy@sysco.com	<a href="http://www.sysco.com/">http://www.sysco.com/</a>	C, P, PLA	B, P, PLA	EP, B	PLA	PO	P, B	P, B	PLA	P, B	YES
Three Bridges Trading	(415) 609-7362	ThreeBridgesTrading@gmail.com		B	B				B	B		B	
US Foodservice	Michael J. Cala John Herrera (925) 606-3585	michael.cala@usfood.com john.herrera@usfood.com	<a href="http://www.usfoodservice.com">www.usfoodservice.com</a>	C, B	C, B	EP	C	C	B	B			YES
WorldCentric Store	(650) 283-3797	bio@worldcentric.org	<a href="http://www.worldcentric.org/store">www.worldcentric.org/store</a>	B, PLA	B, PLA	B	PLA	PO	B	B	YES	B	YES

updated 5/15/07

References to any commercial business, organization, or product does not constitute nor imply endorsement.

PLA=clear plastic corn based, C=non-clear plastic corn, wheat or rice based, B=baggasse (sugarcane fiber), BA=bamboo fiber, PO=non-clear plastic potato based, P=paper fiber (poly-coated OK), EP= PLA coated paper cup (Ecocontainer)

# Green News

Helping Ventura County employees make environmentally responsible choices

## The New Styrofoam Ban – What It Means For You

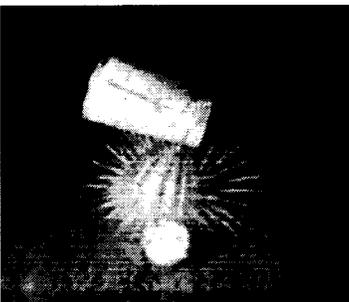
On October 12, 2004, the Ventura County Board of Supervisors adopted a resolution establishing a ban on the use of expandable polystyrene food containers (EPS), known by the trade name "Styrofoam". EPS product usage by vendors, franchisees, lessees, contractors and other commercial food and beverage purveyors was banned at the County Harbor, Parks, and at the Government Center. Also, EPS products are no longer usable at special events held at County facilities which are sponsored or co-sponsored by the County.

By enacting this EPS product usage ban, the Board expressed its desire to continue to exercise environmental leadership and stewardship in Ventura County by helping to reduce the amount of EPS that enters our waste stream, and thereby also helping to reduce the amount of EPS debris that enters local storm drains, watersheds, and our coastal environment.

Prohibited items include, but are not limited to, EPS food containers, bowls, plates, trays, cartons, and cups which are not intended for reuse, on or in which food or beverages are placed, and/or packages. In addition, Section 3 of the Board's resolution states, "All individuals, groups, businesses, non-governmental, and other governmental entities are strongly encouraged (emphasis added) to assist in preserving the environment by ceasing to purchase and use expandable polystyrene food service products".

The Board's adoption of this resolution has provided the Environmental and Energy Resources Division (EERD) of the Water & Sanitation Department, Public Works Agency, with a unique opportunity to identify, compare and evaluate relevant operational, performance, and financial, factors associated with the use of environmentally preferable alternatives to Styrofoam. EERD has been gathering information on product samples, pricing, and performance data regarding sustainable manufacturing processes used in the production of a variety of EPS product alternatives in order to assist the above mentioned County departments comply with the Board's recent EPS product usage ban. Our goal is to provide a list of alternative products, with appropriate performance and cost comparison information, so that vendors may choose the most environmentally preferable and economically viable product alternatives to EPS. And armed with that information, we hope that you, their customers, will encourage vendors to do so.

Many people think of paper or plastic as the only substitute for Styrofoam cups, plates and bowls, but some new and exciting products made from some rather surprising materials are becoming increasingly common in the marketplace. Here is some information to help you understand the different product options and how they affect the environment:



**STYROFOAM or EPS**, is commonly used as a disposable food container due to its light weight, insulating properties, and low price. EPS is a petroleum based product and will not ever biodegrade. EPS is made from crude oil, a non-renewable resource. Like all plastics, every EPS item we've ever produced still exists. It does, though, break down into small pieces, which are mistaken for food and ingested by marine animals. This causes reduced appetite and nutrient adsorption, often leading to slow starvation. According to the Alguita Research Institute, the ratio of plastics to plankton (a major food source for many marine animals) in the oceans is currently 6:1 and increasing.

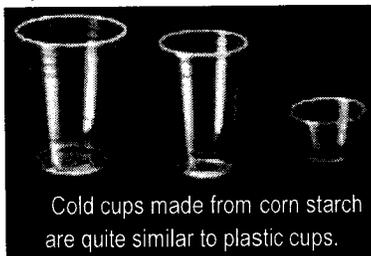
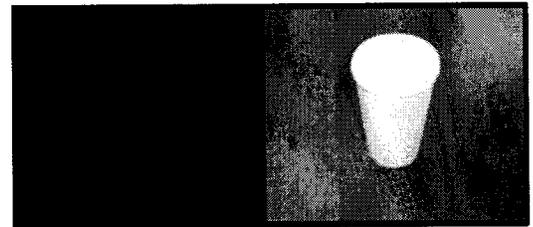
Continued on page 2

**PAPER** products do not have insulation properties. The majority are made from virgin paper and do not contain any recycled content. Most of the products, particularly the cups, contain a poly coating (petroleum based) for insulation and rigidity. Paper products without the coating tend to be rather droopy and, when filled with hot beverages, the cups are too hot to hold. Poly-coated products prevent the paper from breaking down or being recycled in municipal recycling programs, are not considered "recyclable" and consequently are sent to local landfills for disposal. Large amounts of water, as well as chemicals and energy are used in the production of paper products.

**PLASTIC** items are made from non-renewable resources: crude oil. Extraction and refining pollute the environment. Chemicals are used and produced during manufacturing. In addition, excessive water is used for cooling and large amounts of energy are consumed during manufacturing. Plastic products are not biodegradable nor compostable and do not break down. They do not have insulating properties.

**BIOPRODUCTS** are made from renewable natural ingredients – often byproducts of other manufacturing processes. These include products made from corn starch or from the pulp that remains after juice is extracted from sugar cane. The most promising item we've seen, in terms of price and performance, is made from a combination of bamboo, tapioca and water. These products are all completely biodegradable and can be composted. Many local schools use these in their "Zero Waste" lunch programs. The items are combined with food waste and composted for the gardens.

EERD has developed a price sheet that will assist departments in comparing their current costs for food service items. Generally, costs for bioproducts run about the same as prices for Styrofoam and coated paper prices on most food service items. Costs for non-styrofoam hot cups tend to be higher.



The proper evaluation of the "cost-benefits" of any product only starts with its purchase price. The full "life-cycle" cost of any product includes the cost of the raw materials needed to begin producing the product, the costs associated with the production processes, the disposal cost of the item, which often becomes harmful and/or toxic to nature during its disposal, and finally, the larger socioeconomic costs of choosing non-sustainable materials for such products. Initially, the short term personal economic gain associated with the use of EPS products may appear

advantageous to us, but after appropriate reflection, we hope that you consider carefully that the full life-cycle costs of selecting a non-sustainable product can continue for generations after its initial use.

While EPS or Styrofoam is the subject of the Board's recent ban, we hope that each of us will consider taking affirmative steps to reduce the use of all disposable, rigid plastic containers. This will help cut down the amount of trash that goes to our local landfills, as well as improve our local environment. Green Seal, a non-profit organization, has done some research on rigid quick serve food packaging that you may find informative and useful.

Switching from petroleum based Styrofoam or coated paper to a more environmentally friendly product may increase the price of your coffee or meal by a few pennies. But it just doesn't make sense for us to use packaging lasting hundreds of years, when its functional use is 15 minutes or less. As County employees, we hope that you become familiar with the provisions of the Board's EPS product usage ban, and do everything you can, as customers of such products, to help support the County's vendors as they take affirmative steps to transition to more environmentally preferable product alternatives.

We encourage County employees who choose to purchase coffee either at the government center, AM/PM, Starbucks or other locations to bring their own cup. Remember that Starbucks and AM/PM offer a reduced "refill" price. And, whenever possible, please try and use conventional food service ware, rather than disposable items.

We also hope that staff in all County Departments and Agency will take this opportunity to review the products they use as part of performing their daily work, or even in their own break rooms, carefully. Every department scenario is different and unique and we encourage you to call EERD for technical assistance in evaluating your situation so that we can help offer the best alternatives to meet your special needs.

Should you have any questions regarding EERD's technical assistance programs to County Agencies and Departments for this EPS product usage bin and or other aspects of our EP3 efforts, please feel free to contact Gerard Kapuscik, Manager, Resources & Information Section, EERD, directly at 289-3106, or via e-mail: "gerard.kapuscik@mail.co.ventura.ca.us."



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## **Final Report**

### **EPS Food Containers Alternative Products Analysis and Lifecycle Assessment**

#### **Background**

In May 2007, the Los Angeles County (LA County or the County) Board of Supervisors directed the Department of Public Works, in consultation with County Counsel and Internal Services, to investigate the impact of prohibiting the purchase and use of food containers made from expanded polystyrene (EPS) at all County-owned facilities, County offices, County-managed concessions, County-permitted events, and County-sponsored events.

In July 2008, the Department of Public Works completed a preliminary analysis of prohibiting the purchase and use of expanded polystyrene food containers at all County operations. To supplement the findings of Public Works' analysis, the County contracted with the Responsible Purchasing Network (RPN) to serve as a consultant to further quantify the impacts of phasing out EPS food containers.

RPN's analysis included establishing baseline consumption of EPS food containers, identifying alternative products, and conducting lifecycle environmental assessments comparing EPS and alternative products. Based on this analysis, RPN has made recommendations to the County on food container purchases, use, and waste management.

The tasks included in the scope of the project are:

- Task 1: Establish Consumption Baseline
- Task 2: Product Function Analysis
- Task 3: Alternative Products Listing
- Task 4: Life-cycle Environmental Assessment
- Task 5: Reporting
- Task 6: Publicity and Outreach

Enclosed is the final report submitted to the County of Los Angeles from the Responsible Purchasing Network.

## **Task 1: Establish Consumption Baseline**

**Deliverables:** Current County food service container information including polystyrene consumption quantities, dollar amounts, types of products, and suppliers for 40 County departmental operations.

RPN received a total of 44 responses, representing nearly 500 operations, in the following 13 departments:

- Assessor, Office of the
- Beaches and Harbors, Dept of
- Board of Supervisors
- Fire Department
- Health Services, Dept of (DHS)
- Internal Services Dept (ISD)
- Mental Health, Dept of
- Museum of Art
- Natural History Museum
- Parks and Recreation, Dept of
- Probation, Dept of
- Public Social Services, Dept of
- Sheriff's Department

Purchases of EPS food containers were reported in the operations of six departments: The County's Board of Supervisors, Department of Health Services, Natural History Museum, Parks and Recreation Department, Probation Department, and Sheriff's Department. Those six departments—which account for the vast majority of EPS usage in County operations—reported spending a total of **over half a million dollars on EPS food containers** annually.

## **Task 2: Product Function Analysis**

**Deliverables:** Prioritized list of functions for food service containers.

Based on current data, the County uses the following categories of EPS food containers:

1. Plates
2. Bowls
3. Cups
4. Trays
5. Clamshells

In those categories, we have prioritized the following products. We chose a representative product in each of the following categories to conduct a lifecycle analysis.

1. Large plates (9")
2. Small cups (approximately 4-8oz)
3. Small to medium-sized bowls (approximately 8-12oz)
4. Trays (1-5 compartments)

The table below (Figure 1) breaks down our analysis of the baseline priority products.

<b>Criteria for prioritization: Baseline EPS Food Containers</b>					
<b>Function</b>	<b>Baseline product</b>	<b>Expenditures</b>	<b>Units</b>	<b>Waste*</b>	<b>Available Alternatives</b>
<b>Hot and cold food service plate</b>	9" EPS plate	72% of all EPS plates purchased 20% of total EPS purchased	5 million	Due to quantities and widespread usage at County operations, plates have litter reduction potential through alternatives.	Yes: current and other regional suppliers
<b>Hot and cold beverage service container</b>	4-8oz EPS cup	59% of all EPS cups purchased 15% of total EPS purchased	5 million	Cups are used in 23 operations, 14 of which are in the parks. Because cups are used as portable containers, there is litter reduction potential through alternatives.	Yes: current and other regional suppliers
<b>Hot, cold, and wet food service bowl</b>	8-12oz EPS bowl	43% of all EPS bowls purchased 12% of total EPS purchased	½ million	Bowls are used in 10 operations, 3 of which are in the parks. See above.	Yes: current and other regional suppliers
<b>Meal service tray</b>	1-5 compartment EPS tray	All EPS trays purchased 11% of total EPS purchased	2 million	Only 3 large county users (Sheriff, DHS, and Probation) means potentially faster and more complete transition.	Yes: current and other regional suppliers

Figure 1: \*See the attached Responsible Purchasing Guide for Food Containers for a full discussion on the impacts of litter on the environment.

The above four products represent 58% of total EPS purchased, comprised of 12.5 million individual units, spread over 79 operations. Keeping within the scope and budget of the project, clamshells were therefore not prioritized because they represent less than 4% of the total units of EPS food containers purchased and only about 7% of the total annual EPS expenditures. Clamshell food containers were not addressed as a priority baseline product and LCAs were not conducted on any clamshell product for this project. However, RPN will identify alternatives as clamshell products have similar specifications and are available from many of the same vendors as other alternatives. See [Task 5](#) Recommendations section for more details.

The product functions above were identified as the best targets for analyzing alternative products. They were prioritized based on these criteria:

- Total dollar expenditures
- Consumption volume expressed in number of items

- Potential for waste reduction
- Availability of environmentally preferable alternatives

Based on similarities, it is anticipated that the recommendations can be extended to all other EPS food container products.

### Task 3: Alternative Product Listing

**Deliverables:** List of priority replacement products and their costs and a table of relevant suppliers.

#### Summary of Alternative Products

Using the County's hierarchy (see Figure 2<sup>1</sup>), questionnaire responses regarding use and

feasibility, and estimated prices, we have chosen 4 alternative products for each of the prioritized product functions above, plus one additional alternative for the cup function. See the attached spreadsheet, "Task 3 Alternative Product Listing," for the list of 17 alternative products, along with their regional suppliers and estimated costs.

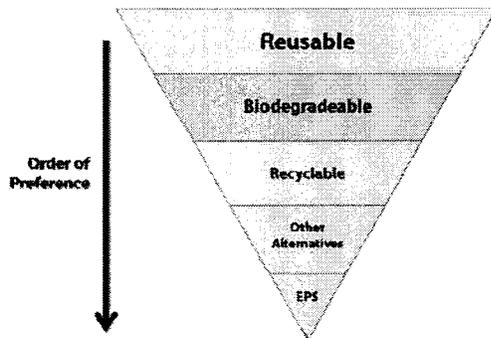


Figure 2 – Hierarchy of Preferred Alternatives for Procurement

These alternatives include products made from: agricultural waste fibers, paper, corn based plastic, polypropylene plastic, glass, and ceramic. Overall there are 12 vendors listed as potential sources of alternative food containers produced by 7 different manufacturers. Unit

prices provided are standard rates for large discounted orders. Larger orders in the millions of units, as would be the case for LA County, could merit further discounts. Quantities would need to be confirmed by the County in any request for a bid. Because of the potential magnitude of the purchase order, it is likely that the County could ask approved vendors to source any or all of these alternative products.

#### Feasibility of Alternatives at County Operations

Eight respondents out of 44 replied that reusable alternatives are feasible in their departments, whereas 23 (including those eight) responded that biodegradable alternatives are feasible. Of the 44 respondents, 13 listed costs as an issue that may hinder transition to alternative products. Morrison, current County food services contractor for three out of four responding DHS operations and some Probation operations, is switching the food containers in its operations to biodegradable paper products available through its contract with P&R Paper.

No health or safety concerns were reported by any county operations in response to the food container questionnaire. In order to clarify these findings, we followed up with three of the County's high volume users of EPS products (DHS, Probation, Sheriff's Department) to identify any potential health and safety concerns with reusable serviceware.

<sup>1</sup> County of Los Angeles Department of Public Works. "An Overview of Expanded Polystyrene Food Containers in Los Angeles County" October 2008, Alhambra, CA.

The Probation Department reported that dishware is prohibited at Juvenile Halls and other detention facilities. These types of food containers are known hazards, as individuals may use them as weapons, endangering the lives of staff and residents. Because Juvenile Halls do not use reusable food containers at their operations, there are no dishwashers currently installed. They predict that alternative single-use products like paper and plastic will be feasible at their facilities. Safety concerns are known to be similar at the Sheriff's department, which is establishing a closed-loop recycling program for their EPS food containers.

Two of the three responding operational contacts from the Department of Health Services reported that reusable food containers are feasible and they are already using them where possible. Staff from LAC+USC Healthcare Network's Food and Nutrition Services (operated by DHS) reported, via email, that "We do have certain patient populations that cannot have china for the same reason [as may be the case with the Sheriff's and Probation Departments, such as jail ward and psychiatric patients]. We have dishwashing equipment and use china for most of our patient meals - with the exception of those listed above."

Based on the commissioned life cycle assessment (attached and Figure 3 below), and other studies<sup>2</sup>, reusable food containers are expected to have lower emissions over their lifetime than other alternatives to EPS food containers. Therefore, RPN reaffirms LA County's designation of reusable food containers as the most preferable (see Figure 2), and recommends their use whenever operationally feasible.

With regards to single use products, the lifecycle environmental assessment coupled with evaluation of other environmental factors also confirmed that transitioning away from EPS food containers would reduce the County's environmental footprint (see extended discussion under Task 4 and Task 5). Due to the challenges of reusable products, a transition to other types of single-use products, besides EPS, is likely to be the most feasible, overall, in the County. Most operations prefer to avoid additional costs associated with the development of new processes and purchase of new equipment. Solutions that are feasible for and preferred by the greatest number of facilities will help increase volume discounts and enhance buy-in among facilities when implementation requires their participation. See Task 5 below for detailed recommendations.

#### **Task 4: Lifecycle Environmental Assessment (LCA)**

**Deliverables:** LCAs for baseline EPS food containers used in LA County, their alternatives, and a subsequent comparison of baseline to alternative products.

RPN and LA County commissioned lifecycle assessments to Dr. Arpad Horvath and Mikhail Chester at the University of California, Berkeley (the "consultants"). The consultants conducted LCAs on four baseline EPS products currently used by the county and 17 alternative products. The LCAs addressed the life-cycle GHG emissions associated with raw material extraction, manufacturing, end-of-life treatment, and transportation of the 21 food containers. Applicable end-of-life scenarios, e.g. composting, recycling, and landfilling, were included for each product. Use-phase emissions were analyzed for the reusable options.

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<sup>2</sup> Alliance for Environmental Innovation: A Project of the Environmental Defense Fund and Pew Charitable Trust. "Report of the Starbucks Coffee Company/Alliance for Environmental Innovation Joint Task Force." April 15, 2000. Available at [www.edf.org/documents/523\\_starbucks.pdf](http://www.edf.org/documents/523_starbucks.pdf). and Hocking, Martin B. "Reusable and Disposable Cups: An Energy Based Evaluation." *Environmental Management* 18(6), 1994, page 889-899. Summary available here: [http://factsonfoam.com/web/factfoam.nsf/files/M-379r0703\\_ILEA.pdf/\\$FILE/M-379r0703\\_ILEA.pdf](http://factsonfoam.com/web/factfoam.nsf/files/M-379r0703_ILEA.pdf/$FILE/M-379r0703_ILEA.pdf).

See the attached “Greenhouse Gas Assessment of Expanded Polystyrene Food Containers and Alternative Products Used in Los Angeles County” for the full analysis.

### Task 5: Reporting

**Deliverables:** Monthly progress reports. A final report containing a summary of environmental impacts of baseline products, recommendations on alternative products, and draft bid specifications.

#### Monthly Progress Reports

Monthly progress reports were submitted on a regular basis for the months of January through May 2009. This final report covers the progress during June and July 2009.

#### RPN Recommendations

Our recommendations are based on:

- information gathered in Tasks 1, 2 and 3 regarding County operations and available alternative products;
- life cycle assessments of EPS and alternative products conducted in Task 4, and
- independent research regarding best practices and potential impacts of food containers, conducted by RPN and reported in the “Responsible Purchasing Guide for Food Containers”.

According to the life cycle data provided by Dr. Horvath, the method of waste management for any food service container is a significant factor in determining its emissions footprint. The table below lists the types of products that produce the least GHG emissions over their life cycles, for each of the three end-of-life scenarios considered: composting, recycling, and landfilling.

Optimal product choices based on end-of-life management			
Product	Compost	Recycling	Landfill
<b>Plate</b>	Bagasse Starches Ceramic (226)	(not applicable)	Bagasse Starches Ceramic (162)
<b>Tray</b>	Bagasse Starches PP (243)	Paper	Bagasse Starches PP (189)
<b>Bowl</b>	Bagasse Ceramic (153)	Paper	EPS Bagasse Ceramic (119)
<b>Hot/Cold Cup</b>	Paper Ceramic (19)	Paper	EPS Ceramic (68)
<b>Cold Cup</b>	PLA Glass (206)	Glass	EPS PLA Glass (69)

Figure 3: Lowest GHG emitting products based on life cycle assessments conducted for this project. The minimum uses necessary for a reusable product to be considered the lowest emitter is in parenthesis. (Note: Starches = bamboo, rice, or sugarcane and corn fibers and starches).

The key factors in the analysis of the environmental impact of a food container are unit weight, material, and end-of-life management. Because clamshell products are similar in weight, made from similar materials, and will be managed in the same ways as other food containers, the following RPN recommendations apply to them as well, despite their omission from the LCA evaluation.

### Summary of Recommendations

RPN recommends that LA County and its contractors:

- Discontinue the purchase and use of EPS food containers at all County operations, subject to operational limitations.
- Use reusable food containers wherever feasible.
- Use food containers made from bagasse, starches, or other agricultural waste products wherever reusables are not feasible (e.g., detention facilities and “take-out” food operations), and single-use products will be composted or landfilled.
- Use food containers made from paper wherever reusables are not feasible (e.g., detention facilities and “take-out” food operations), and single-use products will be recycled.
- Use cups made from PLA for cold beverages wherever single-use products are most feasible.

### EPS Food Containers

As seen in Figure 3, for each waste management strategy evaluated (i.e. composting, recycling, or landfilling) there is a food container product available with equal or lesser associated life cycle GHG emissions. As discussed in the “Responsible Purchasing Guide for Food Containers”, EPS products have additional unique social and environmental issues related to local litter, water pollution, aquatic and riparian wildlife, and human health. For these reasons, RPN recommends LA County discontinue the purchase and use of EPS food containers at all of its facilities and operations.

### Reusable Product Applications

RPN affirms reusable products as the most environmentally preferred food container, as depicted in Figure 2: Los Angeles County’s “Hierarchy of Preferred Procurement.”<sup>3</sup> Reusable dishes have a typical lifespan of 1000-3000 uses<sup>4</sup> and, when used to that potential, stand to reduce LA County’s contribution to GHG emissions compared to single-use food containers in any category. These products’ durability, nature of use, and (in some cases) recyclability are also expected to greatly reduce the litter potential and other environmental impacts of food containers in the County. For these reasons, RPN recommends that LA County use reusable food containers wherever feasible in its operations. Feasible applications include operations

<sup>3</sup> County of Los Angeles Department of Public Works. “An Overview of Expanded Polystyrene Food Containers in Los Angeles County” October 2008, Alhambra, CA.

<sup>4</sup> Alliance for Environmental Innovation: A Project of the Environmental Defense Fund and Pew Charitable Trust. “Report of the Starbucks Coffee Company/Alliance for Environmental Innovation Joint Task Force.” April 15, 2000. Available at [www.edf.org/documents/523\\_starbucks.pdf](http://www.edf.org/documents/523_starbucks.pdf).

where it is safe to use glass, ceramic or plastic dishes, where there is storage space for such dishes, and where there is capacity for dishwashing.

Even where reusable food containers are feasible, single-use food containers may still be needed for food containers purchased to go. Of the County operations where staff reported reusables as feasible options, the following operations were reported as using EPS cups, plates, trays, bowls, and clamshells (see the attached spreadsheet "Baseline EPS Purchases"):

- Kenneth Hahn Hall of Administration
- LAC/USC Medical Center cafeteria\*
- Altadena and Eaton Canyon Golf Courses
- Raging Waters
- Friends of Virginia Robinson

\*LAC/USC Medical Center reported that it was using reusable dishes wherever possible in its patient rooms, so its cafeteria is its only functional location discussed here.

According to the attached LCA report, typical reusable products will emit 513-850 grams carbon dioxide equivalents per dish over 100 years if landfilled. Typical EPS food containers used in LA County will emit 6-35 grams of carbon equivalents per container over 100 years if landfilled. To compare these emissions, one must consider the nature of the products. Reusable dishes are designed to last at least 1,000 uses, whereas EPS containers are single-use disposable items. LA County would need a far greater number of EPS containers in order to serve the same amount of people as could be served with one set of reusable dishes. For instance, a cafeteria could serve food in one ceramic bowl *at least* 1,000 times, whereas 1,000 EPS bowls would be needed for the same amount of service. This means that the 513-850 grams of emissions for a single reusable dish are more aptly compared to the 6,000-35,000+ grams of emissions associated with 1,000+ EPS containers.

The operations above reported purchasing nearly 2 million EPS food containers annually. With an average weight of EPS containers at 0.225 ounces, they produce over 27,000 pounds of waste, or about 270,000 cubic yards of potential litter. Those five LA County operations alone could fill over 80 Olympic-size swimming pools with trash every year.

### **Disposable or Single-use Product Applications**

RPN affirms that biodegradable and recyclable products, such as those made from bagasse, other agricultural waste materials, paper, or PLA, are the most environmentally preferred food container after reusables, as depicted in Figure 2: LA County's "Hierarchy of Preferred Procurement." Which biodegradable or recyclable products are preferred depends primarily on the intended end-of-life handling of the spent food container. Especially when composted or recycled appropriately, these products result in lower GHG emissions over their lifetimes as compared to EPS food containers, are less prone to produce litter, and reduce certain other environmental impacts. In addition, LA County can compost biodegradable containers to create a valuable landscaping product for use at its facilities. For a number of County operations, single-use food containers are preferred over reusable dishes, from an operational standpoint. Those operations include, but are not limited to:

- Department of Probation's juvenile detention centers,
- some Department of Health hospital patient rooms,
- Sheriff's Department inmate facilities, and

- “take-out” food operations, such as cafes and park concessionaires.

For these reason, RPN recommends that these operations, and other similar ones in the County, switch to certified compostable and recyclable products. For more information on products that are certified compostable, see the Responsible Purchasing Guides for Food Services and Food Containers.

#### *Plates, trays, and bowls*

Single-use plates, trays, and most bowls used to serve food will be contaminated with food residue. Recyclers will not accept these contaminated products, as it can ruin the effectiveness and profitability of a recycling stream. For instance, a plate saturated with pizza grease or with cheese adhering to it cannot be recycled. For this reason, RPN recommends that LA County purchase, use, and compost certified compostable food service products for items that the County expects to be contaminated by food residue. We further recommend certified compostable bagasse or starches for plate, tray, and bowl functions.

#### *Hot/cold cups*

Unlike other food service containers, single-use cups are not likely to be contaminated with food residue, as the liquid they hold most often can be poured out. Cups used to serve hot beverages are often coated in order to hold their shape when filled. These coatings may be petroleum or bio-based (e.g. PLA coatings) plastics. Those coated in bio-based plastics can be composted. Recyclability of coated paper products depends on local capacity. According to the attached LCA report, recycling paper cups results in fewer overall GHG emissions as compared to composting. For these reasons, RPN recommends that for hot/cold applications, LA County purchase, use, and recycle paper cups, if regional facilities allow. If regional facilities do not allow for the recycling of empty cups, due to coatings or other reasons, RPN recommends that LA County purchase, use, and compost paper cups coated with bio-based plastics.

#### *Cold cups*

When composted, PLA cold cups result in fewer GHG emissions than all other alternative single-use cups evaluated. Despite the recyclable claim on the label, many different waste management specialists have cited issues in recycling PLA products. For these reasons, RPN recommends that for cold beverage applications, LA County purchase, use, and compost certified biodegradable PLA cups.

According to research conducted by LA County Department of Public Works, the regional facilities listed in Figure 4 may accept biodegradable food containers from County operations. For more information about on-site and contracted composting systems and how composting food waste can save institutions money, see the Responsible Purchasing Guides for Food Services and Food Containers (attached).

Composting Facility Name/Associated Hauler	Address	Phone	Distance (miles)*	Notes
<b>Community Recycling &amp; Resource Recovery, Inc./Crown Disposal</b>	9189 De Garmo Ave. Sun Valley, CA 91352	818-767-6000	22.4	Sun Valley MRF to Bakersfield composting windrows
<b>Zanker Road Resource Mgmt. Ltd.-Z-Best Composting Facility</b>	980 State Highway 25 Gilroy, CA 95020	408-263-2384	313	MSW process takes in MSW and PLA
<b>San Joaquin/Liberty Composting</b>	12421 Holloway Rd., Lost Hills, CA 93249	661-387-0104	160	
<b>Kochergan Farms Composting</b>	33915 Avenal Cutoff Rd., Avenal, CA 93204	559-352-7388	190	
<b>BFI Organics: Newby Island Facility/ Republic Svcs.</b>	1601 Dixon Landing Rd., Milpitas, CA 95035;	408-687-1928	354	
<b>Pebble Beach Disposal Site /Consolidated Waste Disposal</b>	1 Dump Road, Avalon, CA 90704 ;	562-663-3400	55	
<b>Foothill Soils</b>	12221 Lopez Cyn Rd., Sylmar, CA	818-768-1181	25.6	
<b>Jepson Prairie Composting Facility/ Norcal Waste</b>	6426 Hay Rd. Vacaville, CA 95687	800-208-2370	389	
<b>Miramar Landfill</b>	9601 Ridgehaven Court, San Diego, CA 92123-1636	858-573-1284	115	
<b>Grover Landscape Services, Inc.</b>	2825 Kiernan Ave., Modesto, CA 95356	800-585-4401	326	

Figure 4: Local composting facilities that may accept spent biodegradable food containers from LA County operations.

\* Distance is in miles from Alhambra, CA

### Lessons Learned in Institutions

The factors that influence the choice of products and the implementation of their use vary widely from case to case. In order to address some of the more abstract challenges, RPN has gathered additional qualitative accounts from several purchasers regarding their experiences and successes in transitioning to alternative food service products.

The U.S. House of Representatives' Green the Capitol Initiative reported a successful food serviceware switch made in Congressional cafeterias. Their advice was as follows: 1) use a pulping machine to save tipping fees and make composting easier; 2) take the criticism from the few dissenting users with a grain of salt; and, 3) ensure that the initiative has a champion to see the transition through to completion.

The City of Santa Monica cited reusable products as the right fit for small meetings and facilities with existing dishwashing capacity. They noted the reluctance of staff to take on additional clean-up and dishwashing responsibilities as a hurdle in implementation.

The State of California, City of Santa Monica, Delta Institute, Bon Appetit catering services, University of Massachusetts, State of Minnesota, and Commonwealth of Massachusetts have reported the following common issues with varying degrees of concern:

- the applicability of reusable serviceware,
- the costs of alternative products, and
- the best end-of-life management options.

Many chose not to use reusable products for the same reasons discussed in the Task 3 section above and noted increased purchase prices for alternatives to EPS products. They also emphasized the importance of establishing recycling or composting programs in order to realize all the expected environmental benefits and projected cost savings from reduced fees associated with waste management.

### **Environmental and Health Impacts**

A number of health and environmental and health impacts are associated with the choice of food containers. These impacts include:

*Air quality* - In the majority of end-of-life scenarios, EPS containers result in greater greenhouse gas (GHG) emissions when compared to reusable, biodegradable, and recyclable food containers. For each waste management strategy evaluated (i.e. composting, recycling, or landfilling) there is a food container product available with equal or lesser associated GHG emissions than EPS containers.

*Solid waste* –California alone produced 377,579 tons of polystyrene, including 166,135 tons of food service packaging, in 2001.<sup>5</sup> Los Angeles County purchases approximately 150,000 pounds or about 16 million EPS food containers every year. According to the California Integrated Waste Management Board, “Polystyrene (PS) is estimated at 0.8 percent (by weight) of the materials landfilled. However, due to its lightweight nature, its volume is much greater.” By comparison, King County, Washington estimates that, while EPS represents only one percent of the waste stream by weight in the county, that figure translates to approximately 7.9 million cubic feet of EPS disposed of each year, enough to fill 2½ buildings the size of Seattle’s 38-story Smith Tower and taking up about 248,000 cubic yards each year of King County landfill space.<sup>6</sup>

Petroleum-based plastics like EPS degrade or decompose very slowly, potentially remaining intact for hundreds of years, affecting surrounding ecosystems and occupying scarce land. When incinerated, these products contribute to emissions such as sulfur dioxide (SO<sub>2</sub>), dioxins, particulates, carbon dioxide (CO<sub>2</sub>) and nitrogen dioxide (NO<sub>2</sub>).

*Litter* – Improperly disposed of EPS food containers have become a serious waste management issue, accumulating in water systems, affecting wildlife and degrading water quality. EPS and

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<sup>5</sup> *Use and Disposal of Polystyrene in California: A Report to the California Legislature*, California Integrated Waste Management Board, December 2004. Available online at <http://www.ciwmb.ca.gov/Publications/default.asp?pubid=1011>

<sup>6</sup> *Polystyrene Facts*, King County Department of Natural Resources and Parks, Solid Waste Division, May 2008. Available online at: [http://your.kingcounty.gov/solidwaste/greenschools/documents/polystyrene\\_facts.pdf](http://your.kingcounty.gov/solidwaste/greenschools/documents/polystyrene_facts.pdf)

other plastics account for the biggest percentage of waste on Santa Monica's beaches.<sup>7</sup> On one annual Coastal Clean up day, 10,000 volunteers collected 75,000 pounds of predominantly polystyrene and plastic trash from the city's beaches. EPS is light and easily blown, making cleanup much harder. The California Department of Transportation found that polystyrene represented 15 percent of the total volume of litter recovered from storm drains, which flow into natural waterways and ultimately to oceans, threatening wildlife. (CIWMB).

*Hazardous substances and human health* - Polystyrene, the plastic that is foamed to produce EPS food containers, can break down into its styrene building blocks in the manufacture, use, and disposal of styrene-based products. The U.S. EPA has identified styrene as a possible carcinogen and cites "eating food packaged in polystyrene containers" as a potential source of exposure.<sup>8</sup> The U.S. EPA states that persons chronically exposed to styrene—as may be the case for many of California's 150,000 plastics industry workers, which includes over 4,000 individuals working in the polystyrene foam manufacturing sector—are at increased risk for central nervous system effects such as headache, fatigue, weakness, and depression, CSN dysfunction, hearing loss, and peripheral neuropathy.<sup>9</sup>

### **Environmentally Preferable Food Container Bid Specifications**

RPN has gathered and analyzed relevant product standards and bid specifications from the State of California, City and County of Los Angeles, the City of San Jose, and the State of Minnesota. For sample contracts and more general bid specs, see the "[Responsible Purchasing Guide for Food Containers](#)" (attached) and the "[Responsible Purchasing Guide for Food Services](#)". Reference the following when drafting bid specifications for environmentally preferable food containers:

#### *Product Requirements*

- Products must be compostable or recyclable based on the capacity and services of facilities located within California.
- Coated paper products must be compostable based on the capacity and services of facilities located within California.
- Compostable products shall meet ASTM standards D6400 or D6868 as applicable, or be Biodegradable Products Institute (BPI) certified as verified by the bidder.
- Products shall be easily distinguishable at a reasonable distance from conventional EPS products by using identifiers such as a large label on one side of a cup or by color, tint or stripe.
- For compostable and recyclable products, bidder shall provide verification that products can be recycled or composted under current waste management systems, and provide information on at least two regional facilities or services where products may be recycled or composted.

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<sup>7</sup> *Working Our Way Upstream: A Snapshot of Land-based Contributions of Plastics and Other Trash to Coastal Waters and Beaches of Southern California*, by C.J. Moore, G.L. Lattin, A.F. Zellers on behalf of the Algalita Marine Research Foundation and "City of Los Angeles Characterization of Urban Litter" from 2004.

<sup>8</sup> *ToxFAQs™ for Styrene*, Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, Sept. 2007. Available online at: <http://www.atsdr.cdc.gov/tfacts53.html>. Retrieved Oct. 27, 2009.

<sup>9</sup> *Styrene*, U.S. EPA, Technology Transfer Network, Air Toxics Website, Jan. 2000. Available online at: <http://www.epa.gov/ttn/atw/hlthef/styrene.html>. Retrieved Oct. 27, 2009.

- Products must contain recycled content.
- Products intended for “hot use” must not melt, deform or break apart when used as intended. Bidder must provide exact temperature tolerances and use-restrictions for these products.
- Paper product offerings shall be unbleached and processed chlorine-free.
- If unable to bid on exact size, bidder may state nearest comparable size.

*Product Packaging Requirements*

- All packaging materials shall be made from at least 10% post-consumer recycled content and be completely recyclable under current waste management systems.
- All paper based packaging shall contain a minimum 30% post-consumer waste.
- Offerings should not be packed in foil, boPET film (e.g. Mylar), or excessive packaging.

*Preference is given to products:*

- That can be composted in natural, marine, and/or backyard composting environments, as verified by the bidder.
- Certified by EcoLogo,<sup>10</sup> Green Seal,<sup>11</sup> or other reputable third party certification, as appropriate.
- Manufactured with the highest amount of verifiable post-consumer waste content.
- Manufactured with content that is certifiably sourced from sustainably managed forests.
- Manufactured with a non-GMO feedstock.
- That provide for the application of custom labels and/or color identification, without an increase in price.
- With established track records of successful performance.
- With higher performance standards for their intended use, such as weight-holding capacity, security of closure devices, leak resistance, shelf life and other quality factors deemed pertinent.
- Shipped with the least packaging.
- Manufactured with the closest proximity to LA County.

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<sup>10</sup> The EcoLogo Program is a Type I eco-label, as defined by the International Organization for Standardization (ISO). This means that the Program compares products/services with others in the same category, develops rigorous and scientifically relevant criteria that reflect the entire lifecycle of the product, and awards the EcoLogo to those that are verified by an independent third party as complying with the criteria. The EcoLogo Program is one of two such programs in North America that has been successfully audited by the Global EcoLabelling Network (GEN) as meeting ISO 14024 standards for eco-labelling. See: <http://www.terrachoice-certified.com/en/index.asp>.

<sup>11</sup> Green Seal is a non-profit, third-party certifier and standards development body in the United States. Since 1989 it has provided independent, objective, science-based guidance to the marketplace and to consumers. Green Seal is the largest US-based ecolabeling organization and meets the United States Environmental Protection Agency's Criteria for Third Party Certifiers, the requirements of ISO 14020 and 14024, and the standards of the Global Ecolabelling Network. See: <http://www.greenseal.org/certification/standards.cfm>.

- That can be recycled or composted at facilities with the closest proximity to LA County.

## **Task 6: Publicity and Outreach**

Deliverables: Press release regarding this project. A purchasing guide on Food Containers.

### **Press Release**

RPN has prepared a draft press release, which will be need to be reviewed by the Board offices before receiving final approval to release to media outlets.

### **Responsible Purchasing Guide for Food Containers**

RPN has prepared the Responsible Purchasing Guide for Food Containers: a Companion to the Responsible Purchasing Guide for Food Services for the County of Los Angeles (attached). It is published by the Responsible Purchasing Network in print, as a PDF file, and on the web. Print and PDF copies are available to the public for purchase. The online edition includes additional resources available to RPN members, including: searchable product listings, multiple policy and specification samples, comparisons of standards, and related documents. As an RPN member, LA County's Internal Services Department may access the members-only web-based edition of this and other Guides at [www.ResponsiblePurchasing.org](http://www.ResponsiblePurchasing.org).

The Food Containers Guide serves to outline the basic social and environmental issues and costs related to polystyrene food container use, provide model policies and bid specs related to food containers, and address practical issues in waste management related to food containers.

For a more exhaustive analysis of other food service operations and products, please see the "[Responsible Purchasing Guide for Food Services](#)".



RESPONSIBLE PURCHASING GUIDE

# food containers

a companion guide to the Responsible Purchasing Guide for Food Services

MAGAZINE OF THE COUNTY OF LOS ANGELES



Responsible Purchasing Network  
Center for a New American Dream

## **About this Guide**

The Responsible Purchasing Guide for Food Containers: A Companion to the Responsible Purchasing Guide for Food Services is published by the Responsible Purchasing Network in print, as a PDF file, and on the web. Print and PDF copies are available to the public. The online edition includes additional resources, including: searchable product listings, multiple policy and specification samples, comparisons of standards, and related documents. Visit [www.ResponsiblePurchasing.org](http://www.ResponsiblePurchasing.org) to purchase a copy or to access the web-based edition of the Guide.

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## **About the Responsible Purchasing Network**

The Responsible Purchasing Network (RPN) was founded in 2005 as the first national network of procurement-related professionals dedicated to socially and environmentally responsible purchasing. RPN is a program of the Center for a New American Dream ([www.newdream.org](http://www.newdream.org)) and guided by a volunteer Steering Committee of leading procurement stakeholders from government, industry, educational institutions, standards setting organizations, and non-profit advocacy organizations.

## **Acknowledgements**

The Responsible Purchasing Network (RPN) would like to thank the following people for assisting with the development of this Guide. Their expertise helped to ensure quality and accuracy, though RPN alone accepts responsibility for any errors or omissions. Affiliations listed below were current when input was provided to RPN and are listed for identification purposes only and do not imply organizational endorsement of this Guide.

Lead RPN Author: Mary Jo Snavely; RPN Contributors: Christina Moretti; Editors: Dave Tilford and Chris O'Brien.

## table of contents

4	<u>Overview</u>
5	<u>Social and Environmental Issues</u>
8	<u>Best Practices</u>
10	<u>Cost, Quality, and Supply</u>
12	<u>Policies</u>
14	<u>Specifications</u>
16	<u>Standards</u>
18	<u>Products</u>
19	<u>Calculators</u>
20	<u>Addendum</u>
22	<u>Endnotes</u>

## Overview

This Guide is a companion to the Responsible Purchasing Guide for Food Services. RPN has prepared this Responsible Purchasing Guide for Food Containers for the County of Los Angeles. In May 2007, the County Board of Supervisors directed the Department of Public Works, in consultation with the County Counsel and Internal Services, to investigate the impact of prohibiting the purchase and use of food containers made from expanded polystyrene (EPS) at all County-owned facilities, County offices, County-managed concessions, County-permitted events, and County-sponsored events.

This Guide serves to outline the basic social and environmental issues and costs related to polystyrene food container use, provide model policies and bid specs related to food containers, and address practical issues in waste management related to food containers.

For a more thorough analysis of other food service operations and products, please see the Responsible Purchasing Guide for Food Services.

To help RPN continue to provide guides like this one and other leading edge resources on green purchasing, please visit [www.newdream.org](http://www.newdream.org) and give to the Center for a New American Dream.

## Food containers have impacts on air and water quality, solid waste management, street litter, and human health.

### AIR QUALITY

Greenhouse gas (GHG) emissions occur in every phase of a food container's lifecycle. However, according to the life cycle analyses commissioned by RPN for the County of Los Angeles, the method of disposal is the biggest factor in determining the comparative emissions footprint of various food service containers. In the majority of end-of-life scenarios, EPS containers result in greater GHG emissions when compared to reusable, biodegradable, and recyclable food containers. For each waste management strategy evaluated (i.e. composting, recycling, or landfilling) there is a food container product available with equal or lesser associated GHG emissions than EPS containers.

### SOLID WASTE

The California Integrated Waste Management Board's (CIWMB) report, *Use and Disposal of Polystyrene in California: A Report to the California Legislature*, aptly summarizes the solid waste issues associated with EPS food containers as follows: "Food service PS [polystyrene], by its nature, has a useful life that can be measured in minutes or hours. Yet, it takes several decades to hundreds of years to deteriorate in the environment or landfill. Food service PS also represents a significant challenge as litter. Not only does the food service PS break into smaller pieces that may be ingested by wildlife, but materials may also be contaminated with food that decays, creating a health hazard." (CIWMB)

**LANDFILL AND INCINERATION** Single-use disposable food serviceware items (e.g.,

cups, bowls, plates, trays, clamshells, forks, spoons, knives and straws) are typically made from various types of petroleum-based plastics, paper, or expanded polystyrene (EPS, more commonly known by the brand name Styrofoam™). California alone produced 377,579 tons of polystyrene, including 166,135 tons of food service packaging, in 2001 (CIWMB). Los Angeles County purchases approximately 150,000 pounds or about 16 million EPS food containers every year.

According to CIWMB, "Polystyrene (PS) is estimated at 0.8 percent (by weight) of the materials landfilled. However, due to its lightweight nature, its volume is much greater." EPS only weighs less than 10 pounds per cubic yard; it can take up over 10 times more space per pound than cardboard. Furthermore, because EPS food containers are often contaminated with food residue, recycling is not common. Based on industry reports, CIWMB acknowledges, "There is no meaningful recycling of food service PS." In the absence of a recycling market, if disposed of properly and not littered, these products end up in landfills, which ultimately release hazardous emissions. Petroleum-based plastics like EPS degrade or decompose very slowly, potentially remaining intact for hundreds of years, affecting surrounding ecosystems and occupying scarce land. When incinerated, these products contribute to emissions such as sulfur dioxide (SO<sub>2</sub>), dioxins, particulates, carbon dioxide (CO<sub>2</sub>) and nitrogen dioxide (NO<sub>2</sub>). Similar air and water pollution issues exist for other disposable products that are landfilled or incinerated, as well.

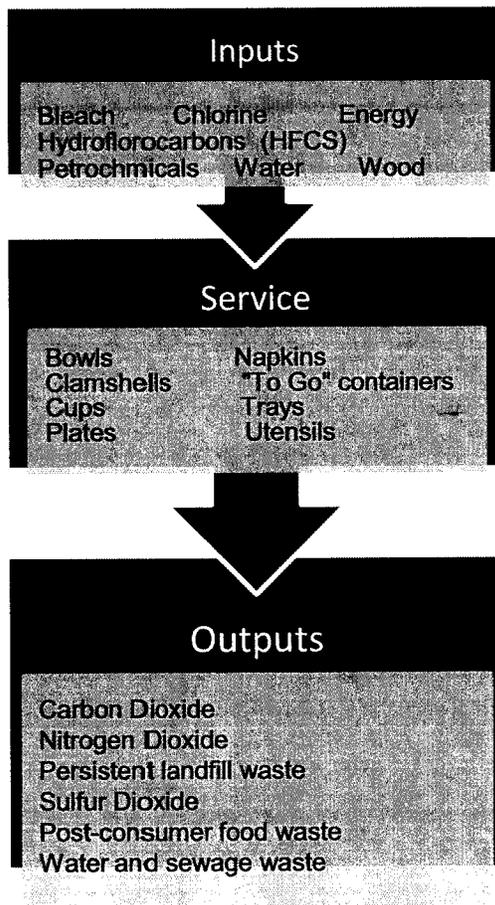


Figure 1 Summary of the Inputs and Outputs Related to Food Containers

## LITTER

EPS food containers are predominantly used as “to-go” containers, and are often improperly disposed of by consumers and blown or washed away by wind or water, or picked up and transported by animals from landfills and trashcans. These products are not recycled because they lack durability and are often covered in food by the time they reach the trash can. As a result, EPS food containers have become a serious waste management issue, accumulating in water systems, affecting wildlife and degrading water quality. Banning

such food containers can alleviate the problem. San Francisco's foam container ban resulted in a 36% reduction of polystyrene street litter after the first year it was implemented (CWA).

Plastics like polystyrene are a serious pollutant in oceans, rivers, and wetlands. Studies show that the 60-80% of all marine debris and 90% of floating marine debris is plastic. The California Department of Transportation found that polystyrene represented 15 percent of the total volume of litter recovered from storm drains (CIWMB). Storm drains flow into natural waterways and ultimately into the ocean, increasing exposure of wildlife to contaminants and litter. EPS and other plastics account for the biggest percentage of waste on Santa Monica's beaches. On one annual Coastal Clean up day, 10,000 volunteers collected 75,000 pounds of predominantly PS and plastic trash from the city's beaches (Santa Monica).

Ocean currents are converging much of this buoyant plastic trash in an area in the Pacific called the North Pacific Gyre. The huge, but amorphous, region north of Hawaii is now commonly referred to as the Great Pacific Garbage Patch (NOAA). Debris from the Los Angeles River and San Gabriel River watersheds is a significant contributor to the Great Pacific Garbage Patch, as well as to trash accumulating on beaches and in waterways around the world (Gordon 23-24).

Floating and sub-surface plastic trash affects wildlife all along the food chain. Patches of floating debris can inhibit the growth of aquatic plants, in turn degrading spawning areas and habitats for fish and other aquatic animals. Organisms as small as zooplankton ingest the plastic fragments, such as EPS

fragments. Birds, turtles, and other riparian wildlife are known to swallow plastic and feed it to their young, mistaking it for food (Gordon 23-24). Mammals looking for fish eggs, accidentally eat plastic resin pellets, also known as nurdles (AMRF). As a result, these animals become malnourished and sometimes poisoned by the litter they eat. The EPA reported on the adverse effects of plastic pellets (the feedstock for plastic and EPS product manufacturing) as early as 1992 (EPA). Because plastic and EPS remain intact, their contribution to the litter problem is amplified as pollution continues over time.

#### **HAZARDOUS SUBSTANCES AND HUMAN HEALTH**

New studies show that hazardous chemicals added to plastics during the manufacturing process, such as nonylphenols, polybrominated diphenyl ethers (PBDEs), phthalates, and bisphenol A (BPA), may be carried or absorbed by plastic particles and released by plastic debris, potentially harming wildlife and humans wherever it goes (AMRF). On a scale of concern ranging from negligible, minimal, some, to serious, the National Toxicology Program concluded that they have “some concern for effects on the brain, behavior, and prostate gland in fetuses, infants, and children at current human exposures to bisphenol A” and “minimal concern for effects on the mammary gland and an earlier age for puberty for females in fetuses, infants, and children at current human exposures to bisphenol A” (NTP). Some PBDEs are listed by the US EPA as possible human carcinogens (ASTDR). These are just some of the health risks that have been linked to the additives in the plastics floating in waterways and washing up on beaches.

Polystyrene, the plastic that is foamed to produce EPS food containers, is itself a harmful substance. It can break down into its styrene building blocks in the manufacture, use, and disposal of styrene-based products. A possible human carcinogen and neurotoxin, styrene has been found in food packaged in polystyrene (EPA 2000). Studies show that persons chronically exposed to styrene, as may be the case for many of California’s 150,000 plastics industry workers, which includes over 4,000 individuals working in the polystyrene foam manufacturing sector, are at increased risk for depression, headache, fatigue, weakness, kidney dysfunction and cancer (CIWMB, US Census)

## Best Practices

The steps outlined below reflect green purchasing best management practices and lessons learned in RPN's investigation of Los Angeles County's use of and expenditures on EPS food containers. Use these steps in conjunction with best practices from the **Responsible Purchasing Guide for Food Services.**

### MEASURE AND MONITOR

Establish a system to measure and compare the human, environmental, and fiscal impacts related to your procurement, use and disposal of food serviceware. First, conduct an inventory of the food serviceware products currently being used by each facility and identify their current disposal methods. Using this data, estimate the Total Cost of Ownership (TCO) for these goods. Include factors such as purchase price, maintenance, cleaning, and disposal, and attempt to calculate the overall human and environmental impacts of these products. Download our sample Serviceware Tracking spreadsheet.

Consider conducting Life Cycle Assessments (LCAs) for each type of food container used, or refer to existing studies such as the one Los Angeles County and RPN commissioned. More information is available online at [www.ResponsiblePurchasing.org](http://www.ResponsiblePurchasing.org). Sometimes vendors can provide LCAs and/or other human health and environmental studies related to their products. Seek studies that were conducted by independent external entities who follow ISO guidelines rather than by manufacturers or suppliers with a vested interest in the outcome. Use the Serviceware and Composting Calculators in the [Calculators](#) section of this Guide to help approximate

multiple financial and environmental costs associated with serviceware use and disposal.

Smaller institutions may be able to gather this information via site visits. Large organizations with many facilities and operations may be required to survey key staff such as purchasing agents, dining services managers, or waste management personnel. Make the questionnaire as specific as possible, so as to ensure the most accurate and complete data. See the [Addendum](#) for a revised version of the questionnaire used to evaluate the EPS food container use of over 400 Los Angeles County operations.

### TRAYLESS DINING

Consider reducing or eliminating the use of trays. A study of 25 food service institutions conducted by Aramark reports that eliminating serving trays reduces per person food waste by 25-30% and decreases water use by about a half gallon per tray per meal (Aramark 2008).

### COMPOSTABLE AND RECOVERED CONTENT SERVICWARE AND CONTAINERS

Use reusable, compostable, recycled, and recyclable tableware, glassware, and containers rather than single use items made from limited or sensitive natural resources such as petroleum and trees. Often, the most

cost effective strategy (including extra staff time for loading dishwashers) is to purchase and wash reusable/durable serviceware. For takeout service, compostable serviceware and containers are becoming increasingly available, made from agricultural waste or quickly renewable natural resources such as corn or potato starch, polylactic acid, bamboo, coconut, sugarcane fiber and starch. When choosing biodegradable or compostable products, pair them with an effective composting program in order to realize the maximum human and environmental benefits associated with these products. Certified compostable containers biodegrade completely within approximately six months when properly composted (ASTM).

#### **COMPOST**

Food and other organic materials can be diverted from the waste stream by establishing a composting program that provides organic materials for landscaping operations or local farms. Composting can be conducted onsite or offsite and/or contracted to a service provider. Weigh the costs and feasibility of these options based on factors such as volume and types of waste generated, onsite land availability, availability of labor, and local demand for compost. Limit the labor associated with waste sorting by providing clearly marked compost bins and ask food service staff to develop a waste separation system.

#### **ONSITE COMPOSTING OPERATIONS**

Onsite composting operations require upfront capital but will provide cost savings over time. Onsite composting can involve either traditional outdoor systems or indoor composter units. Use waste audit measurements (See the Food Services Guide for more details) to project the amount of organic material that will be available for

composting. Research any permit requirements before establishing an onsite composting program. The following case studies exemplify successful onsite composting operations.

Connecticut Department of Corrections  
University of New Hampshire  
Brown Creek Correctional Institute, Polkton, NC

**OFFSITE COMPOSTING.** Contact your local or state solid waste agency for a list of composters in your area. Local composters may include farmers or privately owned composting facilities. Identify which organic wastes the composter will accept, your expected waste volume, and associated fees. There may be multiple facilities in your area willing to set up composting programs. Try to develop a composting collection schedule with other nearby facilities to reduce hauling fees. The following case study exemplifies a successful offsite composting operation.

Orange County, North Carolina

## **Cost, Quality and Supply**

### **COST**

**Though, on a per unit basis, traditional food serviceware may seem inexpensive, it is an ongoing expense that can add up. Prior to July 2009, facilities operated by or contracted by Los Angeles County purchased over half a million dollars worth of EPS products on average every year. Other cost saving opportunities associated with food serviceware include: water and energy efficiencies in dishwashing, recycling revenues, and composting waste. Cost savings vary, but pilot programs can help provide realistic projections of potential savings.**

#### **REUSABLE FOOD CONTAINERS**

Using durable rather than disposable serviceware reduces disposal costs. Bowling Green State University in Ohio switched from disposable to durable glasses, diverting 26,450 pounds of waste from the landfill and saving \$32,000 in waste fees in one year (WDCE 2006). Use the Serviceware Calculator to estimate cost savings from switching to reusable cups and bowls. According to a 2006 article from Healthcare Design Magazine, "Mercy Hospital, a 240-bed facility in Janesville, Wisconsin, set about revamping its food delivery system with a goal of improved feedback from patients. By switching to reusable dishware and flatware and going to a 'room service plan' in which patients order what they want, when they want it, Mercy was able to eliminate duplicate trays and unwanted food and facilitate a transition to reusable dinnerware. Add to that a recycling

program, in which recyclables stay on the food tray and are then segregated back in the food service area, and you've got one successful program, a win-win situation" (Brown).

#### **ALTERNATIVE SINGLE USE DISPOSABLE CONTAINERS**

Based on research conducted by RPN for the County of Los Angeles, alternatives such as compostable items made from sugarcane, potato starch, paper, and corn-based plastic may sometimes be purchased at competitive prices, but are typically 2-4 times more expensive per unit compared to EPS products. The best way to offset these costs is to improve efficiency and reduce waste overall. This often includes improving recycling programs and integrating a composting system to ensure proper disposal of these products. In one pilot project that served over 33,000 patrons at a federal cafeteria, the agency saved

\$880 on landscaping expenses by composting food waste and compostable serviceware and applying the resulting compost to their grounds (USDA). Other institutions realize revenues by selling their compost locally. See the Responsible Purchasing Guide for Food Services for details on how composting can save money.

### **QUALITY**

There are many food container products on the market, including ceramic, glass, plastic, and many new alternative one-time-use disposable products. Most reusables are designed to last for 1000-3000 uses. According to research conducted for Starbucks in 2001, environmental benefits begin to accrue after just 36 uses for glass items and 75 uses for ceramics. Due to their durability, reusables prove the best option for dine-in services where storage and dishwashing capacity are available (AEI). Though consumer complaints slowed early adoption of compostable and recyclable products, there are many products that meet the performance needs of food service facilities. Here are some basic quality requirements:

- ▶ Freezer and microwave proof
- ▶ Maximum use temperature of 420°F
- ▶ Water and oil resistant
- ▶ Compostable within 180 days or less

To ensure products meet basic performance criteria, like those above for temperature, wetness, and cooking applications, ask for samples from vendors and have them tested at the facilities that will use them. See Standards and Specifications sections below for more details on quality requirements.

### **SUPPLY**

There are dozens of vendors of food container alternatives. Bagasse, paper, and polylactic

acid (PLA) products are now available through most mainstream dining services contractors (including those in the Compass family of companies) and food packaging suppliers. Institutions can also purchase these products directly through smaller regional manufacturers and distributors. Ask current dining service contractors and food container vendors about products certified by Biodegradable Products Institute (BPI), Green Seal, and EcoLogo.

## For more model and sample policies related to food services, please see the Responsible Purchasing Guide for Food Services.

### Healthcare Without Harm, Sample Policy for Purchasing Reusable Products, 2008

Provides guidelines for purchasing activities to minimize the purchase of single-use, disposable products in order to reduce waste in hospitals when it does not compromise patient safety or care.

### Rockland County, New York, Government Polystyrene Foam Elimination Act, 2008

The County recognizes the threat that non-biodegradable food packaging can have on wildlife and the environment. In an effort to reduce the amount of waste in landfills serving the county, the government is taking steps to reduce the quantity of non-biodegradable food packaging products. This local law bans the use of polystyrene foam products by food vendors operating in Rockland County government departments and agencies.

### City and County of San Francisco, Food Services Waste Reduction Ordinance, 2006

Sections 1601 through 1611 prohibit the use of polystyrene foam disposable food serviceware and require the use of biodegradable/compostable or recyclable disposable food serviceware by restaurants, retail food vendors, City departments and City contractors.

### California, Public Resources Code, Division 30, Chapter 5.42359.6(a), no date

Directs companies to label food containers appropriately so the terms “compostable,” “biodegradable,” “degradable,” do not imply that the container will break down in landfill, composting, marine, or other natural terrestrial environments, unless, at the time of the sale, the plastic food or beverage container meets the ASTM standards for the term used on the label.

**Other municipalities with some manner of EPS food container ban include, but are not limited to:**

Albany, CA	Pacific Grove, CA
Alisa Viejo, CA	Palo Alto, CA
Berkeley, CA	Portland, OR
Calabasas, CA	Rancho Cucamonga, CA
Capitola, CA	San Mateo County, CA
Emeryville, CA	Santa Cruz, CA
Huntington Beach, CA	Santa Cruz County, CA
Los Angeles City, CA	Santa Monica, CA
Malibu, CA	San Clemente, CA
Millbrae, CA	Santa Monica, CA
Monterey, CA	Seattle, WA
New Port Beach, CA	Sonoma County, CA
Oakland, CA	Ventura County, CA
Orange County, CA	Watsonville, CA

**These jurisdictions have proposed or have pending bans on polystyrene containers:**

Issaquah, WA  
Maui County, HI  
San Juan Island, WA  
State of California  
State of Hawai'i  
State of New York

## Specifications

**Use these specifications, based on RPN research and other sample contracts listed below, to bid for compostable or recyclable serviceware.**

### **PRODUCT REQUIREMENTS**

- ▶ Products must be compostable or recyclable based on the capacity and services of facilities located within California.
- ▶ Coated paper products must be compostable based on the capacity and services of facilities located within California.
- ▶ Compostable products shall meet ASTM standards D6400 or D6868 as applicable, or be Biodegradable Products Institute (BPI) certified as verified by the bidder.
- ▶ Products shall be easily distinguishable at a reasonable distance from conventional EPS products by using identifiers such as a large label on one side of a cup or by color, tint or stripe.
- ▶ For compostable and recyclable products, bidder shall provide verification that products can be recycled or composted under current waste management systems, and provide information on at least two regional facilities or services where products may be recycled or composted.
- ▶ Products must contain recycled content.
- ▶ Products intended for “hot use” must not melt, deform or break apart when used as intended. Bidder must provide

exact temperature tolerances and use-restrictions for these products.

- ▶ Paper product offerings shall be unbleached and processed chlorine-free.
- ▶ If unable to bid on exact size, bidder may state nearest comparable size.

### **PRODUCT PACKAGING REQUIREMENTS**

- ▶ All packaging materials shall be made from at least 10% post consumer recycled content and be completely recyclable under current waste management systems.
- ▶ All paper-based packaging shall contain a minimum 30% post-consumer waste.
- ▶ Offerings should not be packed in foil, boPET film (e.g. Mylar), or excessive packaging.

### **PREFERENCE IS GIVEN TO PRODUCTS:**

- ▶ Certified by EcoLogo or Green Seal. (See Standards section for details.)
- ▶ That can be composted in natural, marine, and/or backyard composting environments, as verified by the bidder.
- ▶ Manufactured with the highest amount of verifiable post-consumer waste content.
- ▶ Manufactured with content that is certifiably sourced from sustainably managed forests.
- ▶ Manufactured with a non-GMO feedstock.

- ▶ That provide for the application of custom labels and/or color identification, without an increase in price.
- ▶ With established track records of successful performance.
- ▶ With higher performance standards for their intended use, such as weight-holding capacity, security of closure devices, leak resistance, shelf life and other quality factors deemed pertinent.
- ▶ Shipped with the least packaging.
- ▶ Manufactured with the closest proximity to LA County.
- ▶ That can be recycled or composted at facilities with the closest proximity to LA County.

**SAMPLE SPECIFICATIONS**

City and County of San Francisco, CONTRACT 88402: Disposable Food Containers, Utensils & Service items – Standard and Compostable, 2007-2010

Standard food service items are limited to those made from paper, wood, and natural materials. Preference is given to clearly labeled, BPI-certified compostable paper products and those not lined with petroleum based materials.

California, Contract Number 1-09-73-02C, Disposable Food Service Supplies (Cups, Lids, Containers and Napkins), 2009-2010

Products must be compostable and biodegradable as defined by ASTM Standards. Sets recycled content minimums for containers, lids, sleeves, and napkins. Requires that all packaging materials contain at least 10% post consumer recycled content, and that all paper-based packaging must contain at least 30% post consumer recycled content.

## Standards

**Environmental standards and certifications such as the following make it easy for institutions to choose high quality and environmentally preferable disposable serviceware.**

### Green Seal

#### GS-35: STANDARD FOR FOOD SERVICE PACKAGING

Founded in 1989, Green Seal is a non-profit environmental standards-setting and certification agency based in Washington D.C. Standards are developed through an open stakeholder process. Evaluation of products and practices is done by Green Seal technical staff and external auditors and includes a comprehensive review of the product/practice components, supporting data, product/practice performance, and an on-site audit to ensure that all criteria are met. Certification requires annual monitoring to ensure continued compliance.

The GS-35 Standard establishes environmental criteria for disposable packaging and carry-out containers, including containers, plates and bowls from restaurants and other retail food service establishments. All products must have a minimum recycled content of 45% by weight and must be manufactured without use of chlorine bleaching and other toxics in packaging and inks.

### EcoLogo

#### CCD-145: Food Containers

EcoLogo™ is a Type I ecolabeling program (as defined in ISO 14024), and is managed by TerraChoice Environmental Marketing Inc. EcoLogo certifies resources used in food

service operations through the use of full life cycle assessments. Certification criteria documents are developed through a process conforming to ISO 14024 ecolabeling standards. The open, public and transparent process ensures the participation of a broad base of stakeholders including user groups, product producers and associations, government agencies, scientists, consumer representatives, academics and environmental advocates. Stakeholder input guides much of the establishment of criteria. The process includes performing an environmental life-cycle evaluation, determining the range of current industry performance, and establishing leadership criteria that represent approximately the top 20% of the industry.

This is a multi-attribute environmental standard for food containers that are made from agricultural waste products. The standard covers performance, safety, hazardous substances, and biodegradability.

### BIODEGRADABLE PRODUCTS INSTITUTE (BPI) AND ASTM INTERNATIONAL

ASTM D6400 - 04 Standard Specification for Compostable Plastics

ASTM D6868 - 03 Standard Specification for Biodegradable Plastics Used as Coatings on Paper and Other Compostable Substrates

BPI is a multi-stakeholder non-profit working group that seeks to reduce the use of petroleum-based plastic by promoting

biodegradable materials. BPI certifies products against the ASTM standard for compostable plastics and coatings. ASTM International is a voluntary standards development organization that sets requirements for materials, products, systems, and services all around the world. The ASTM standard on compostable products covers plastics that are designed to be composted in municipal and industrial aerobic composting facilities. Plastics must contain properties that will allow 100% compostability at a rate comparable to known compostable materials.

## • Products

**Use the RPN online Food Services product database to find serveware (cups, plates, knives, forks, spoons, trays, containers and napkins) certified by Biodegradable Products Institute (BPI), Green Seal, and EcoLogo.**

**Use the Serviceware (Wasteless) and Composting (Economic Analysis for Food Waste Composting or Reuse) calculators in the Food Services Guide to quantify costs, savings, and impacts related to food containers.**

## Addendum

**Use the survey questionnaire below to gather information about the use, expenditures, and impacts of EPS food container use. This is a modified version of a questionnaire that RPN developed for the County of Los Angeles.**

### Expanded Polystyrene Food Container Products Survey

Our organization is conducting a survey of our use and expenditures on EPS, commonly known as Styrofoam™, food containers. This information will help us to more fully understand current EPS usage across departments, and assess the feasibility of replacing food containers, such as cups, plates, and trays, made from EPS with other more environmentally preferred alternatives.

Please complete this questionnaire on behalf of your entire department and attach additional sheets if necessary.

Department/Location:

Contact Person:

Phone: (Business): (Cell):

Fax:

Email:

Address:

1. Please list all of the operations, facilities, or locations under your purview that use disposable food containers, along with their addresses, for example:

Hall of Administration, 500 West Temple Street, Los Angeles, CA 90012

XYZ Clinic, 123 N. Walnut St, Hawthorne, CA 90250

2. Which, if any, of the above (excluding contractors) directly purchases any EPS food container products? Please describe how these products are purchased (e.g. against a contract, from Office Depot, from a local vendor, etc) and complete the table under question #6 below.

3. Does your department have any contracts or agreements requiring the purchase of EPS food container products? ---- Y/N. If "Yes," when do those contracts end, and do they allow for any revisions prior to expiration?

4. Does your department work with contractors (e.g. cafeterias, concessions, events management, or catering services) who purchase any EPS food container products? ---- Y/N. If "Yes," please list those contractors and their contact information here and ask them to complete the table in question #6.

5. Please list the contact information for all EPS food container product suppliers (e.g., manufacturers, distributors, dining service providers) that work with your department or its contractors. If none, please enter "none."

Supplier Name Contact Person E-mail Phone

6. Please list all of the types (with size and description), functions, quantities, and costs associated with EPS food container products purchased or used in your department. If listing the number of cases, please include units per case.

<b>EPS Food Container Type</b>	<b>Where Is It Being Used?</b> (e.g., cafeteria, patient rooms, etc)	<b>For What Purpose?</b> (e.g., serving inmates, office parties)	<b>What is being served?</b> (e.g., hot foods, greasy foods, etc)	<b>Quantity</b> (units/period) (e.g., 40,000 cups /yr or 740 cases/month)	<b>Cost</b> (\$/unit or total cost in dollars per year)
<b>e.g., 8oz white cups</b>					

7. Does your department currently use food container products that are not made from EPS?----Y/N. If "Yes," please describe these in terms of type, function, quantity and cost.

8. Does your department have any special considerations related to health, safety, security, or other factors, when selecting food container products?----Y/N. If "Yes," please describe.

9. In the event EPS food container products are banned, do you foresee any significant issues in transitioning to alternative food container products? Please describe in detail. Examples might include: lack of dishwashing capacity, currently recycling only #1 and #2 plastics, limited composting capacity.

10. Which alternative food container products might be feasible for use at your department? (check all that apply) If there are any that are not feasible, please explain.

Reusable

Biodegradable/Compostable

Recyclable

Others:

11. Comments:

## Endnotes

- AEI – Alliance for Environmental Innovation: A Project of the Environmental Defense Fund and Pew Charitable Trust. “Report of the Starbucks Coffee Company/Alliance for Environmental Innovation Joint Task Force.” April 15, 2000. Available at [www.edf.org/documents/523\\_starbucks.pdf](http://www.edf.org/documents/523_starbucks.pdf).
- ATSDR - Department of Health and Human Services, Agency for Toxic Substances and Disease Registry. “ToxFAQs for Polybrominated Diphenyl Ethers (PBDEs).” September 2004. Available at <http://www.atsdr.cdc.gov/tfacts68-pbde.html>.
- AMRF – Algalita Marine Research Foundation. “Pelagic Plastic.” April 9, 2007. Available at <http://www.algalita.org/pdf/AMRFWhitePaper.pdf>.
- Aramark – Aramark Higher Education. “A Business and Cultural Acceptance Case for Trayless Dining” July 2008.
- CIWMB – California Integrated Waste Management Board. *Use and Disposal of Polystyrene in California: A Report to the California State Legislature*. December 2004. Available at [www.ciwmb.ca.gov/Publications/Plastics/43204003.doc](http://www.ciwmb.ca.gov/Publications/Plastics/43204003.doc).
- CWA – Clean Water Action. “Support the Ban on Foam Take-Out Containers.” 2009. Available at <http://www.cleanwateraction.org/currents/california/summer2009/support-ban-foam-take-out-containers>.
- EPA – United States Environmental Protection Agency, Office of Water. *Plastic Pellets in the Aquatic Environment: Sources and Recommendations*. December 1992. Available at <http://dinrac.nowpap.org/documents/13%20EPA%20Plastic%20Pellets.pdf>.
- \_\_\_\_\_. 2000. United States Environmental Protection Agency, Technology Transfer Network, Air Toxics Web Site. “Styrene.” January 2000. Available at <http://www.epa.gov/ttn/atw/hlthef/styrene.html>.
- Gordon, Miriam for the California Coastal Commission and Algalita Marine Research Foundation. “Eliminating Land-based Discharges of Marine Debris in California: A Plan of Action from The Plastic Debris Project.” June 2006. Available at [http://www.plasticdebris.org/CA\\_Action\\_Plan\\_2006.pdf](http://www.plasticdebris.org/CA_Action_Plan_2006.pdf).
- Brown, Janet. *Healthcare Design Magazine*. “Reduce, Reuse, Recycle—and Save.” June 2006. Accessed on May 25, 2009. Available at <http://www.healthcaredesignmagazine.com/ME2/dirmod.asp?sid=9B6FFC446FF7486981EA3C0C3CCE4943&nm=Articles&type=Publishing&mod=Publications%3A%3AArticle&mid=8F3A7027421841978F18BE895F87F791&tier=4&id=4D1B83737D6049A5A9573AC92CB580E0>.
- NOAA – NOAA Marine Debris Program. “De-mystifying the ‘Great Pacific Garbage Patch’ or ‘Trash Vortex’: Frequently Asked Questions.” Accessed on June 24, 2009. Available at <http://marinedebris.noaa.gov/info/patch.html>.
- NTP – National Institutes of Health, National Institute of Health Sciences, National Toxicology Program. “Since You Asked - Bisphenol A: Questions and Answers about the National Toxicology Program's Evaluation of Bisphenol A.” Accessed on June 24, 2009. Available at <http://www.niehs.nih.gov/news/media/questions/sya-bpa.cfm>.

- Santa Monica – Santa Monica Office of Sustainability and the Environment. “Container Ban FAQs.” Accessed on June 23, 2009. Available at <http://www.smgov.net/Departments/OSE/categories/content.aspx?id=4822>.
- US Census – United States Census Bureau. "Polystyrene Foam Product Manufacturing: 2002." December 2004. Available at <http://www.census.gov/prod/ec02/ec0231i326140.pdf>.
- USDA – United States Department of Agriculture, Cooperative State Research, Education, and Extension Service. "Food and Biobased Cafeteriaware Composting for Federal Facilities in WDC." December 8, 2005. Available at <http://www.csrees.usda.gov/nea/plants/pdfs/cafeteriaware.pdf>.
- WDCE- White Dog Community Enterprises. “Cut it Out: Cost cutting measures that provide more dollars for better food.” 2006 Available at [http://www.whitedogcafefoundation.org/FTI/cost\\_cutting.php](http://www.whitedogcafefoundation.org/FTI/cost_cutting.php).

# Greenhouse Gas Assessment of Expanded Polystyrene Food Containers and Alternative Products Used in Los Angeles County

## – Final Project Report –

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### **1. Scope of Work**

The project called for conducting a greenhouse gas (GHG) assessment using life-cycle assessment (LCA) methods of four food container types (plate, tray, bowl, cup) made of expanded polystyrene (EPS) and three alternatives for each type. Given time and monetary constraints, we had to rely on publicly available data and making certain assumptions about geographical and temporal coverage, and narrow the impact analysis to global warming potential (GWP).

LA County instructed RPN to use the following product preference hierarchy:

1. reusable products (most preferable)
2. biodegradable products
3. recyclable products
4. other alternative products
5. expanded polystyrene (least preferable)

Based on this hierarchy, RPN selected 17 products as alternatives to the four baseline EPS products, i.e., four alternatives each for EPS plate, tray and bowl, and five alternatives for EPS cup. Only 12 alternatives were included in the scope, but RPN voluntarily expanded this list in order to be more comprehensive. RPN selected the County's four highest consumption volume (in units) EPS products as the baseline products. The EPS replacements were selected based on the County's hierarchy and a survey conducted of LA County facilities regarding their capacity and willingness to use proposed replacements. This list of replacements is reflected in Table 1 below and is included (with additional

information such as product name, manufacturer, suppliers) in RPN's final report to the County accompanying this environmental assessment.

The life-cycle phases considered in this study included raw material extraction, manufacturing, use, and end-of-life treatment. Transportation was assessed as occurring in these life-cycle phases.

## **2. Method of Analysis**

We analyzed the life-cycle GHG emissions associated with raw material extraction, manufacturing, end-of-life treatment, and transportation of the four products made of EPS as well as 17 alternative products. Use-phase emissions were analyzed for the reusable options.

LCA, as described in the ISO 14040 voluntary international standards, has four steps: goal and scope definition, inventory assessment, impact assessment, and interpretation. It is important to note that ISO 14040 is simply a framework, it does not prescribe exactly how an LCA should be conducted, where data would be found, what the uncertainties of the analysis would be, how results should be interpreted, and similar.

To the best of our abilities given time and monetary constraints (including relying on publicly available data and making certain assumptions about geographical and temporal coverage, and narrowing the impact analysis to GWP), we followed these standards as a framework and included each of the four steps: defined the goal and scope of the analysis, inventoried the GHG emissions from the four life-cycle phases and transportation, determined the GWP of the GHG emissions (impact assessment), and interpreted and analyzed the results.

## **3. Product Analyses**

EPS product weights were determined by weighing individual units. The alternative product weights were determined by weighing individual units or estimating unit weights based on case weights provided by manufacturers or suppliers with packaging subtracted (see reference [1]). Weights are expressed in ounces, a common unit of weight measurement used in the United States.

The source of truck emissions is reference [2] and ship emissions reference [3]. The source of end-of-life emissions is reference [4]. We assumed the County would use some combination of these three composting facilities: Thermal (139 mi away), Victorville (87 mi away), and San Diego (115 mi away). Our calculations used an average distance of 100 miles for transportation to these compost facilities. For landfill disposal, we considered all active landfills in LA County. Given this mix of landfills, the average waste transport distance of 37 miles was used. Recycling centers are located throughout the County and are typically more evenly dispersed than landfills, so 30 mile haul was assumed.

We made efforts to communicate with manufacturers, but no information was provided that could be used in our analyses.

We made the following assumptions, and used the additional studies referenced below, for the products we analyzed:

### **3.1. EPS products**

9" Pactiv plate, 12 oz Pactiv bowl, 8 oz Pactiv cup, 10"x8" Pactiv tray

Pactiv has 43 plant locations in North America, and we have been unable to ascertain the location of the plant from where these products are shipped to LA County (reference [5]). The assumed transportation distance from the manufacturer to Los Angeles County is 1,000 miles by truck. (However, even if the distance were 2,500 miles, the maximum distance expected to be trucked in the United States, it would not change the conclusions in this study.) The source of environmental data for manufacturing is reference [6], which provides a "rolled up" number, i.e., the number

includes raw material extraction, transportation of raw materials to the manufacturing plant, as well as manufacturing. The end-of-life fate of EPS products is landfill, with no product degradation assumed over the next 100 years. The spent food containers are assumed to be trucked an average 30 miles to a regional landfill (reference [7]).

### **3.2. Sugarcane bagasse products**

12 oz EarthSmart bowl, 9" EarthSmart plate, 5 compartment WorldCentric tray

Sugarcane bagasse is considered an agricultural waste material (meaning it would otherwise be landfilled) and it is assumed to be available CO<sub>2</sub>-emission free to food-container production because all its environmental impacts are assigned to the main product from sugarcane processing, i.e., sugar. The assumption is that these sugar production by-products would otherwise be landfilled. The manufacturer is assumed to ship the product 2,500 miles by truck to Los Angeles County (an approximate distance from sugarcane processing states like Florida). The spent food containers are assumed to be trucked an average 30 miles to a regional landfill or 100 miles to a composting center.

### **3.3. Bamboo, rice, or sugar cane and corn fibers and starches ("Starches") products**

10.25" Eatware plate, 5 compartment Eatware tray

Fibers and starches from bamboo, rice, sugar cane, or corn are considered agricultural waste materials, and thus available CO<sub>2</sub>-emission free to food container production because all their environmental impacts are assigned to the main product from the processing of these raw materials. The assumption is that these agricultural by-products would otherwise be landfilled. The manufacturer is located in China, and it ships the products 6,500 miles to Los Angeles County by container ship (Shanghai to Long Beach) and then by truck an estimated 30 miles from the port to the final point of use. The spent food containers are assumed to be trucked an average 30 miles to a regional landfill or 100 miles to a composting center.

### **3.4. Potato starch and calcium products**

12 oz Biodegradable Food Service bowl, 9" Biodegradable Food Service plate

We were unable to locate publicly available data on the manufacturing emissions of this material, but we took into account transportation and end-of-life emissions associated with the product. The manufacturer is assumed to ship the product 2,500 miles by truck to Los Angeles County (an approximate distance from the Midwest where the manufacturer is likely to be located). The spent food containers are assumed to be trucked an average 30 miles to a regional landfill or recycling center, or 100 miles to a composting center.

### **3.5. 100% recycled paper products**

Pactiv 14"x8" tray

In absence of information about where it is manufactured, it is assumed that the manufacturer ships the product 1,000 miles by truck to Los Angeles County. (However, even if the distance were 2,500 miles, it would not change the conclusions in this study.) The product is assumed to be made of uncoated bleached kraft paperboard (with 20% post-consumer content). An environmental emissions estimate was made using the Environmental Defense Fund Paper Calculator ([www.papercalculator.org](http://www.papercalculator.org)) for uncoated bleached kraft paperboard with 20% postconsumer content. (The postconsumer content is the only relevant variable related to recycling in the EDF calculator, however, postconsumer content information was not found for this product. Based on public information from other similar manufacturers, more than 20% is unlikely.) The environmental emission factor is assumed to be a "rolled-up number," i.e., the number includes raw material extraction, transportation of raw materials to the manufacturing plant, as well as manufacturing. The spent food containers are assumed to be trucked an average 30 miles to a regional landfill or recycling center, or 100 miles to a composting center.

### **3.6. Paper products with linings/coatings**

10 oz Biodegradable Food Service cup, 8 oz International Paper (ecotainer) cup, 12 oz International Paper (ecotainer) bowl

The paper structure of all cups and the bowl is analyzed the same way. It is assumed that the manufacturer ships the product 1,000 miles by truck to Los Angeles County. The product is assumed to be made of uncoated bleached kraft paperboard (with 0% post-consumer content). An environmental emission estimate was made using the Environmental Defense Fund Paper Calculator (reference [8]) assuming uncoated bleached kraft paperboard, containing 0% postconsumer content. The postconsumer content is based on manufacturer information online as listed in reference [9]. The postconsumer content is the only relevant variable related to recycling in the EDF calculator.) The environmental emission factor is assumed to be a “rolled-up number,” i.e., the number includes raw material extraction, transportation of raw materials to the manufacturing plant, as well as manufacturing. The spent food containers are assumed to be trucked an average 30 miles to a regional landfill or recycling center, or 100 miles to a composting center.

We could not establish what the “bio” lining claim on the 10 oz Biodegradable Food Service cup means, but it is likely that its contribution to the carbon footprint of a cup is negligible.

We could not find data on the polylactide (PLA) lining of the International Paper (ecotainer) products, but it is likely that its contribution to the carbon footprint of a cup is negligible. In the absence of evidence to the contrary, for products with Sustainable Forestry Initiative (SFI) certification a further assumption was made that SFI certification does not influence the GHG balance of a product. The paper structure of the ecotainer cup and bowl were analyzed the same way as the Biodegradable Food Service paper cup.

### **3.7. PLA plastic cold cup**

9 oz Nature Works/Greenware

It is assumed that the manufacturer ships the product 1,600 miles by truck to Los Angeles County from its plant in Blair, Nebraska. The source of GHG emissions from manufacturing is reference [10]. The spent food containers are assumed to be trucked an average 30 miles to a regional landfill or recycling center, or 100 miles to a composting center.

### **3.8. Polypropylene (PP) tray**

14”x18” Sysco Cafe Tray

The source of environmental data for manufacturing is reference [11], which provides a “rolled up” number, i.e., the number includes raw material extraction, transportation of raw materials to the manufacturing plant, as well as manufacturing. It is assumed that the manufacturer ships the product 1,000 miles by truck to Los Angeles County. The two end-of-life fates of PP products are landfilling, with no product degradation over the next 100 years, or recycling if facilities exist. The reference calculator for end-of-life fate [4] we used does not have data for PP, most likely because this plastic is rarely recycled in the United States (<10% of PP gets recycled). Instead we modeled PP recycling after HDPE recycling, which is recycled about 25% of the time. The trays are assumed to be trucked on average 30 miles to a landfill or a recycling center at the end of their useful life.

It was assumed that on average 0.5 liters of water will be used for every time a tray is washed. GHG emissions from water usage are available from reference [12]. Water use adds 0.5 grams of CO<sub>2</sub> equivalent emissions to the GHG footprint of this product. The analysis of washing machine and detergent use were bypassed due to lack of data.

### **3.9. Ceramic products**

9” Sysco Mosaic plate, 12 oz Sysco Mosaic Couple soup bowl, 8 oz Sysco Mosaic Colony mug

The source of environmental data for manufacturing is reference [13], which provides a “rolled up” number, i.e., the number includes raw material extraction, transportation of raw materials to the manufacturing plant, as well as manufacturing. From reference [13], the sector 327112 “Vitreous china and earthenware articles manufacturing” was used for the analysis, and the manufacturing cost of \$0.50 was assumed for each product. The manufacturer is assumed to be located in China, and it ships the products 6,500 miles to Los Angeles County by container ship (Shanghai to Long Beach) and then by truck an estimated 30 miles from the port to the final point of use. The end-of-life fate of these products is landfill. The products are assumed to be trucked an average 30 miles to a regional landfill at the end of their useful life.

It was assumed that on average 0.5 liters of water will be used for each washing of each product. GHG emissions from water usage are available from reference [12]. Water use adds 0.5 grams of CO<sub>2</sub> equivalent emissions to the GHG footprint of each of these products. The analysis of washing machine and detergent use were bypassed due to lack of data.

### **3.10. Glass cold cup** 9 oz Sysco (domestic gibraltar)

The source of environmental data for manufacturing is reference [13], which provides a “rolled up” number, i.e., the number includes raw material extraction, transportation of raw materials to the manufacturing plant, as well as manufacturing. From reference [13], the sector 327221A “Glass and glass products, except glass containers” was used for the analysis, and the manufacturing cost of \$0.50 was assumed for the product. The manufacturer is assumed to be located in China, and it ships the product 6,500 miles to Los Angeles County by container ship (Shanghai to Long Beach) and then by truck an estimated 30 miles from the port to the final point of use. The end-of-life fate of glass products is landfilling or recycling. The products are assumed to be trucked an average 30 miles to a regional landfill or recycling center at the end of their useful life.

It was assumed that on average of 0.5 liters of water will be used for each washing. GHG emissions from water usage are available from reference [12]. Water use adds 0.5 grams of CO<sub>2</sub> equivalent emissions to the GHG footprint of this product. The analyses of washing machine and detergent use had to be skipped due to lack of data.

## **4. Results of Inventory and Impact Analysis**

Table 1 shows the results of the analysis expressed as global warming potential (GWP) in units of grams of CO<sub>2</sub> equivalent emissions measured over a 100-year horizon. (GWP is commonly expressed over the time period of 100 years, i.e., the impacts of CO<sub>2</sub> emissions are measured over 100 years.) Water use adds 0.5 grams of CO<sub>2</sub> equivalent emissions to the GHG footprint of each reusable product.

## **5. Uncertainty Analysis**

The uncertainties most significantly affecting the results appear to be those due to missing data, narrowly defined boundaries of the analyses we relied on, and the technological representativeness and the age of the data we used.

Manufacturing data was not found for the potato starch and calcium products, and the assumption that bagasse and Starches materials are available burden-free for food container production may not be true if these materials are burned for energy at the sugar cane and other processing plants rather than landfilled, as is our assumption.

In general, the quality of the data in this study is very difficult, in some cases impossible to establish due to lack of detailed documentation, with the exception of truck transportation data which comes from Horvath's work. This is not unusual in LCA – there are constant strives for higher quality data.

There are potentially significant methodological shortcomings, but these are impossible to establish about the public data sources used in this study. For example, the boundaries of the analyses that yielded the data used in this study may have been narrowly set, i.e., the entire and complete supply chain behind these products may not have been analyzed, but only a subset of the supply chain. The only exception is the truck transportation data, which include the entire supply chain.

The geographical boundaries and year of the data obtained from public sources are different from source to source. The EPS, PP, and oceangoing shipping data are based on European practices (which may not be very different from U.S. practices). The rest of the data are based on United States practices, but even the U.S. data are averages, thus not necessarily representative of the specific manufacturers that supply the food container products to Los Angeles County or the practices at end-of-life facilities in and around LA County. Further, we had to use U.S. average data as proxies for manufacturing the ceramic and glass materials in China due to lack of Chinese data, when in reality there may be significant differences in emissions. In addition to geographical boundaries, it is very difficult, in some cases impossible, to establish to what year, and consequently, what technological conditions the data apply.

Product weight, per unit [oz]	Product	Material	Material Extraction through Manufacturing	Transport to Place of Use	Transport to End-of-Life (LF, C, REC)	End-of-Life (Landfilling)	End-of-Life (Composting)	End-of-Life (Recycling)	Total (EOL: Landfilling)	Total (EOL: Composting)	Total (EOL: Recycling)
0.3		EPS	26	2	0.05, 0, 0	0.4	N/A	N/A	28	N/A	N/A
0.5		Bagasse	0	7	0.1, 0.3, 0	1	0	N/A	8	7	N/A
0.7	Plate	BR/SC	0	3	0.1, 0.3, 0	1	0	N/A	4	3	N/A
0.5		P S & Ca	n.a.	7	0.1, 0.3, 0	1	0	N/A	8	7	N/A
23.3		Ceramic	452	80	4, 0, 0	29	N/A	N/A	566	N/A	N/A
0.4		EPS	33	2	0.1, 0, 0	0.4	N/A	N/A	35	N/A	N/A
1.0		Bagasse	0	15	0.2, 0.6, 0	1	0	N/A	16	16	N/A
1.1	Tray	BR/SC	0	4	0.2, 0.6, 0	1	0	N/A	5	4	N/A
4.1		100% R Pap	313	24	0.7, 2, 0.7	34	-25	-448	372	314	-110
13.3		PP	753	78	2, 0, 6	17	N/A	-581	850	N/A	256
0.1		EPS	5	0.3	0.01, 0, 0	0.1	N/A	N/A	6	N/A	N/A
0.3		Bagasse	0	4	0.1, 0.3, 0	0.4	0	N/A	5	4	N/A
0.4	Bowl	Pap w/PLA	36	2	0.1, 0.3, 0.1	3	-3	-44	41	35	-6
0.3		P S & Ca	n.a.	4	0.1, 0.3, 0	0.4	0	N/A	5	4	N/A
16.7		Ceramic	452	58	3, 0, 0	21	N/A	N/A	534	N/A	N/A
0.1		EPS	7	0.4	0.01, 0, 0	0.1	N/A	N/A	8	N/A	N/A
0.4		Pap w/bio	36	2	0.1, 0.3, 0.1	3	-3	-44	41	35	-6
0.3	Hot/cold cup	SFI Pap w/PLA	27	2	0.1, 0.3, 0.1	3	-2	-33	32	27	-4
12.4		Ceramic	452	43	2, 0, 0	16	N/A	N/A	513	N/A	N/A
0.3	Cold cup	PLA plastic	2	3	0.1, 0.3, 0.1	7	-2	N/A	12	3	N/A
13.8		Glass	448	48	2, 0, 2	17	N/A	-120	515	N/A	376

Table 1. Global warming potential of EPS and alternative material food containers, in grams of CO<sub>2</sub> equivalent emissions per unit product, excluding water use for washing reusable\*. The numbers were rounded to whole grams or tenths of a gram. (Note: LF=landfill; C=composting facility; REC=recycling center; Bagasse=sugarcane bagasse; Starches=bamboo, rice, or sugarcane and corn fibers and starches; P S & Ca=potato starch and calcium; 100% R Pap=100% recycled paper; PP=polypropylene; Pap w/PLA=paper with polylactide lining; Pap w/bio=paper with bio lining; SFI Pap=SFI paper; N/A=not applicable; n.a.=not available)

\* It was assumed that on average of 0.5 liters of water will be used for each washing. GHG emissions from water usage are available from reference [12]. Water use adds 0.5 grams of CO<sub>2</sub> equivalent emissions to the GHG footprint of reusables. The analysis of washing machine and detergent use were bypassed due to lack of data.

## 6. Interpretation of Results

Given the unavailability of complete and up-to-date data and information, as well as uncertainties with the existing methodologies and data, we can interpret the findings of the study as follows.

The end-of-life fate of products makes the decisive difference under the methodological constraints, data availabilities, assumptions, and uncertainties present in this study (see Table 2). Since we did not have manufacturing data for the potato starch and calcium products, they were excluded from the interpretation of results.

When landfilled or composted, sugarcane bagasse or Starches plates and trays and EPS or bagasse bowls appear to have the lowest GHG emissions compared to the other disposable plate, tray and bowl alternatives analyzed. However, paper trays and bowls would be the best options if LA County could recycle them. Reusables would provide the lowest impact if they were reused many times. If ceramic plates were washed and reused at least 162 times, they would have the lowest emission compared with landfilled disposables. The reuse numbers for PP trays should be at least 189 and for ceramic bowls 119. If the disposables were composted, ceramic plates would need to be washed and reused at least 226 times to compete with the lowest emission disposables, PP trays 243 times, and ceramic bowls 153 times.

Product	Optimal product choices based on end-of-life management		
	Composting	Recycling	Landfilling
Plate	Bagasse Starches Ceramic (226)	(not applicable)	Bagasse Starches Ceramic (162)
Tray	Bagasse Starches PP (243)	Paper	Bagasse Starches PP (189)
Bowl	Bagasse Ceramic (153)	Paper	EPS Bagasse Ceramic (119)
Hot/Cold Cup	Paper Ceramic (19)	Paper	EPS Ceramic (68)
Cold Cup	PLA Glass (206)	Glass	EPS PLA Glass (69)

Table 2. Summary of recommendations. Reusable products are considered to be the lowest emitter so long as they are used as least as many times as the number shown in parentheses.

If hot/cold cups will be recycled, all the paper options are the most preferred. If hot/cold cups will be landfilled, the EPS is the best option. If hot/cold cups will be composted, the best option is the paper cups. For cold cup functions, the EPS and the PLA products are the lowest emitters if landfilled. The PLA product is the lowest emitter if composted. If ceramic cup are reused at least 68 times, they would be the best options for both cup functions.

## 7. Applicability of Results to Other Urban Areas of the United States

The conclusions are applicable to urban areas of the United States other than Los Angeles County because much of the manufacturing and end-of-life data are U.S. averages. However, local differences may make a difference relative to this study, e.g., products may be sourced from more or less polluting manufacturers or the location of waste management facilities may vary. The transportation distances may be very different; however, transportation emissions represent less than

20% of the manufacturing emissions in this study, so their influence is not expected to be greater in other studies either.

## References:

- [1] Responsible Purchasing Network (2009), "Alternative Product Listing: Expanded Polystyrene Food Container Products Questionnaire for Los Angeles County."
- [2] Facanha, C. and Horvath, A. (2007), "Evaluation of Life-cycle Air Emissions Factors of Freight Transportation." *Environmental Science & Technology*, 41(20), pp. 7138-7144.
- [3] Kristensen, H. O. (2006), "Cargo Transport by Sea and Road – Technical and Economical Environmental Factors." *Nav. Eng. J.*, 118(3), pp. 115-129.
- [4] Environmental Protection Agency (2006), "Waste Reduction Model Emission Factors," Washington, DC; [http://www.epa.gov/climatechange/wycd/waste/calculators/Warm\\_home.html](http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_home.html) (accessed 4/15/09).
- [5] Pactiv Corp (2009), "2008 Annual Report on Form 10-K." Lake Forest, IL; [http://www.pactiv.com/Investor\\_Relations/Annual\\_Report/images/Pactiv2008AR.pdf](http://www.pactiv.com/Investor_Relations/Annual_Report/images/Pactiv2008AR.pdf) (accessed 7/13/09)
- [6] Plastics Europe (2006), "Eco-Profiles of the European Plastics Industry: Polystyrene (Expandable) (EPS)," Brussels, Belgium; <http://lca.plasticseurope.org/index.htm> (accessed 5/15/09)
- [7] Sanitation Districts of Los Angeles County (2009), "Solid Waste Facilities." [http://www.lacsd.org/about/solid\\_waste\\_facilities/default.asp](http://www.lacsd.org/about/solid_waste_facilities/default.asp) (accessed 7/13/09)
- [8] Environmental Defense Fund (2009), "Paper Calculator." <http://www.papercalculator.org> (accessed 6/10/09)
- [9] International Paper (2008), "ecotainer™ - Frequently Asked Questions." [http://www.internationalpaper.com/Packaging/Packaging\\_Products/Foodservice/ecotainer/ecotainer\\_FAQ.html](http://www.internationalpaper.com/Packaging/Packaging_Products/Foodservice/ecotainer/ecotainer_FAQ.html) (accessed 7/13/09)
- [10] Vink, E.T.H., Glassner, D.A., Kolstad, J., Wooley, R.J., O'Connor, R.P (2007), "The Eco-Profiles for Current and Near-Future NatureWorks® Polylactide (PLA) Production." *Industrial Biotechnology*, 3(1), pp. 58-81.
- [11] Plastics Europe (2006), "Eco-Profiles of the European Plastics Industry: Polypropylene," Brussels, Belgium; <http://lca.plasticseurope.org/index.htm> (accessed 7/09/09)
- [12] Stokes, J. and Horvath, A. (2009), "Energy and Air Emission Effects of Water Supply." *Environmental Science & Technology*, 43(8), pp. 2680-2687.
- [13] Carnegie Mellon University Green Design Institute (2009), "Economic Input-Output Life Cycle Assessment (EIO-LCA), US 1997 Industry Benchmark model [Internet]." Pittsburgh, PA; <http://www.eiolca.net> (accessed 7/09/09)

**RESTRICTED USE OF EPS FOOD CONTAINERS  
DEPARTMENTAL STATUS**

Following is a brief summary of the transition status of County departments with significant EPS usage:

**Beaches and Harbors**

Concessions at 13 beach sites from Malibu to Torrance and one Marina facility may currently use EPS products, but language contained within the concession license agreements will allow the prohibition against the use of EPS products, within 60 days of the Board action; future concession license agreements to commence in 2014 will specifically incorporate the new restriction. Similarly, the "Gladstone's 4 Fish" restaurant concession agreement is broad enough to allow the imposition of the EPS prohibition within 60 days; furthermore, the operator has indicated it currently does not use EPS food and beverage containers. Beach use permits, extending through December 31, 2010, do not currently require the use of environmentally-friendly alternative food containers, but future permits will incorporate the new restriction.

**CEO - Hall of Administration**

Contracts for the catering truck and snack shops will be in compliance by June 2011. The contract vendors have also expressed commitment to voluntarily switch to non-EPS food containers. It should be noted that the cafeteria vendor for the Hall of Administration voluntarily switched to non-EPS food containers in November 2009, and has expressed their commitment to continue this policy for the duration of their current contract through June 2011.

**Community and Senior Services**

Community and Senior Services, which manages the Congregate Meals and Home Delivered Meals Program, has 23 four-year contracts that were executed beginning in 2008 which include food container purchases. The contracts will be revised as they expire, with the last set of contracts scheduled to expire by July 2012. Contract amendments would be time-intensive and potentially result in service to fewer constituents. The Department holds quarterly meetings with all vendors and will continue to encourage vendors to voluntarily restrict the use of EPS containers. While the Department is concerned that potential increased costs may result in a reduction in services by their contractors, the specific Program impact cannot be determined at this time because contractors will select the non-EPS products they use and the vendors through which products are purchased.

**Health Services**

All five County hospitals are in the process of awarding new contracts for Food and Nutrition Services. DHS will be recommending new contracts to the Board of

Supervisors in December 2010, following completion of the Request for Proposals process. The contracts will require vendors to comply with Board policy.

**Parks and Recreation**

Parks and Recreation is educating its concessionaires and event leaders about the new requirements for purchasing and use of food containers, and asking them to restrict the use of EPS products and to start utilizing alternative products, for all County-permitted events and County-sponsored events, at County-owned facilities. No later than June 30, 2011, County Counsel-approved language prohibiting the use of EPS products will be added to the agreements and the Department will ensure all relevant information is added to event materials.

**Probation**

The Probation Department has phased out EPS food containers in 15 of their 19 locations where food service is provided. The remaining four locations include three juvenile halls and one camp facility. Probation has incorporated a provision for alternative products in two Juvenile Hall solicitations and will ensure that these provisions are included when the contracts are executed. For the remaining Juvenile Hall and camp facility, alternative product language will be included in the contract solicitations. Probation is also investigating the potential for implementing an EPS recycling program at these four facilities.

**Sheriff**

The food service contract for the Sheriff's Department was executed in June 2009 and will expire in five years (with good ratings). The contract is reviewed annually and can be revised with justification. Currently, alternative products are used only in civilian areas. The Sheriff's Department is investigating an EPS recycling program for their facilities, which is discussed in further detail below. The contract will be adjusted to provide for purchasing alternatives if the EPS recycling contract is not implemented.

**Expanded Polystyrene Food Container Recycling for the Sheriff's Department**

In working with industry representatives, Public Works has determined that there are a limited number of companies that have developed methods of collecting and recycling EPS food containers. These companies are able to process certain types of relatively clean EPS containers that can be separately collected and aggregated in large quantities. Therefore, in order for recycling by a private vendor to be feasible, County operations currently using EPS food containers must have abundant quantities of relatively clean EPS material available for collection. The Sheriff's inmate facilities generate sufficient quantities of EPS material and the Sheriff has the resources and storage capabilities to facilitate a coordinated recycling effort.

In August 2009, ISD solicited bids seeking a vendor to collect and recycle EPS food containers generated by the Sheriff's Department inmate facilities. No responsive bids were received as a result of this bid solicitation effort, however ISD and Public Works met with interested parties to receive input on how the program requirements might be modified to encourage responsive bids while maintaining the County's goals for the recycling contract. After revising the requirements, one responsive bid was received. We anticipate that a contract will be operational by December 1, 2010, following procurement, installation, and testing of additional equipment to satisfy contract requirements. After evaluating the first year of a Sheriff recycling contract, the County would have the opportunity to expand the program, subject to the vendor's ability to accommodate quantities generated, to include Health Services and Probation facilities.

### **End-of-Life Management of Alternative Products**

New contracts or infrastructure may be needed to properly handle alternative products that are recyclable or compostable. Recycling and composting opportunities can be limited by location, space, cost, and the ability to separate products. For example, Morrison, the contractor at Harbor-UCLA Medical Center, has been researching various companies that collect green waste (primarily produce trimmings) as well as food waste and compostable food containers. Morrison indicates that companies typically charge a service fee of approximately \$300 per week to manage these materials, which may be partially offset by reduced disposal costs. In addition, County operations would have to provide solutions to significant challenges in order to facilitate these efforts, such as:

- Providing adequate and appropriate storage of waste, recyclable and/or compostable materials between pick-ups
- Providing for the recycling or composting of disposable products in which food has been consumed
- Separating food waste from the single-use products if required
- Acquiring sufficient funding for additional space, supplies, services, and/or staffing associated with any new program.

Public Works and ISD will continue to provide technical assistance to departments to phase in EPS recycling or composting of alternative products to the extent it is technically and economically feasible.

Title:		Contents:	<b>P-1050</b>
<b>PURCHASE OF ENVIRONMENTALLY PREFERABLE PRODUCTS (GREEN PURCHASING)</b>		Submitted By:	<b>Purchasing Division</b>
		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	<b>Revised 10-7-09</b>
		Page No.	<b>1 of 8</b>

### **Purpose**

Los Angeles County is a very large consumer of goods and services and the purchasing decisions of our employees and contractors can positively or negatively affect the environment. By including environmental considerations in our procurement decisions, along with our traditional concerns with price, performance and availability, we will remain fiscally responsible while promoting practices that improve public health and safety, reduce pollution, and conserve natural resources. The purpose of this document is to establish the framework for establishing an environmentally based purchasing program for Los Angeles County.

### **Board Policy**

On January 16, 2007, the Board of Supervisors adopted a Countywide Policy instructing that all County departments to implement the County's Energy and Environmental Programs for energy conservation and environmental stewardship (See Board of Supervisors Policy No. 3.045, Energy and Environmental Policy). To implement the County's "green" initiatives, County departments will be tasked to:

- Institute practices that reduce waste by increasing product efficiency and effectiveness;
- Purchase products that minimize environmental impacts, toxics, pollution, and hazards to worker and community safety to the greatest extent practicable, and to
- Purchase products that include recycled content, are durable and long-lasting, conserve energy and water, use agricultural fibers and residues, reduce greenhouse gas emissions, use unbleached or chlorine free manufacturing processes, and use wood from sustainable harvested forests.

To meet the Board's policy objectives, we must develop and implement procedures for the procurement of environmentally preferable (or "green") and energy efficient products and services.

Purchasing objectives will include acquisitions that:

- Conserve natural resources;
- Minimize environmental impacts such as pollution and use of water and energy;
- Eliminate or reduce toxics that create hazards to workers and our community;
- Support strong recycling markets;
- Reduce materials that are put into landfills;
- Increase the use and availability of environmentally preferable products that protect the environment;
- Encourage manufacturers and vendors to reduce environmental impacts in their production and distribution systems; and
- Create a model for successfully purchasing environmentally preferable products that encourages other purchasers in our community to adopt similar goals.

Title:		Contents:	<b>P-1050</b>
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		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	Revised 10-7-09
		Page No.	2 of 8

In coordination with the County's Environment and Energy Team, ISD's Purchasing Division will have overall responsibility for this program. This will include establishing appropriate standards for green purchasing, assessing cost effectiveness and making recommendations related to acquisition strategies and maintaining data and issuing reports related to the County's progress in environmental purchasing. These areas are further detailed in the attached procedures.

**PURCHASING PROCEDURES AND STANDARDS**

**Defining Environmentally Preferable Products**

All products for which the United States Environmental Protection Agency (U.S. EPA) has established minimum recycled content standard guidelines, such as those for printing paper, office paper, janitorial supplies, construction, landscaping, miscellaneous, and non-paper office products, shall contain the highest post-consumer content practicable, but no less than the minimum recycled content standards established by the U.S. EPA Guidelines.

In general, environmentally preferable products and services are those that would have a reduced effect on human health and the environment when compared with competing products and services. More specifically, this comparison would include consideration of all phases of the product's life cycle, including raw materials acquisition, production, manufacturing, packaging, distribution, operation, maintenance and disposal, including potential for reuse or ability to be recycled.

In practice, the objective is to purchase products that have reduced environmental impact because of the way they are made, used, transported, stored, packaged and disposed of. It means looking for products that do not harm human health, are less polluting and that minimize waste, maximize use of bio-based or recycled materials, conserve energy and water, and reduce the consumption or disposal of hazardous materials. When determining whether a product is environmentally preferable, the following standards should be considered:

✓ Biobased	✓ Made from renewable materials
✓ Biodegradable	✓ Compostable
✓ Carcinogen-free	✓ Low toxicity
✓ Bioaccumulative toxic (PBT)-free	✓ Recycled content, Reusable
✓ Chlorofluorocarbon (CFC)-free	✓ Reduced packaging, Refurbished
✓ Heavy metal free (i.e., no lead, mercury, cadmium)	✓ Reduced greenhouse gas emission
✓ Low volatile organic compound (VOC) content	✓ Energy, Resource and Water efficient

Title:		Contents:	<b>P-1050</b>
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		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	<b>Revised 10-7-09</b>
		Page No.	<b>3 of 8</b>

## **Purchasing Environmentally Preferable Products**

### County Purchasing Agent Responsibilities – General

In coordination with the County's Environment and Energy Team, ISD's Purchasing Division will be responsible for:

- Working with other governmental purchasing groups and agencies, such as U.S. Communities, NACO and CSAC to determine appropriate standards for green purchasing.
- Assigning central purchasing staff to evaluate various green products and to provide guidance and assistance to County departments.
- Developing and implementing a 5-year plan to phase in various categories of purchased goods under the green program umbrella. Relative easy to implement items (e.g., paper, cleaning supplies, etc.) will be implemented very early in the program.
- Heading up teams to evaluate various types of products where the cost differential is great and/or the products are not considered good substitutes.
- Assessing and making recommendations on the use of price preferences.
- Maintaining data and issuing reports related to the County's progress in environmental purchasing.
- Establishing central purchasing agreements with a catalogue of environmentally friendly and energy efficient products and to modify our existing agreement data bases for the easy identification of green products.

In establishing countywide commodity agreements, the County's Purchasing Agent will specify the requirement for environmentally preferable products where applicable, and will evaluate product alternatives where appropriate. This evaluation would include: consideration of total costs expected during the time a product is owned, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime of a product(s) as compared to other alternatives.

In the evaluation and/or award process:

- ✓ Products that are durable, long lasting, reusable or refillable will be preferred whenever feasible.
- ✓ Wherever possible, suppliers of electronic equipment, including but not limited to computers, monitors, printers, and copiers, shall be requested to take back equipment for reuse or environmentally safe recycling when the County discards or replaces such equipment; and
- ✓ All suppliers shall be required, where applicable, to use and recycle packaging material used for product delivery.

Title:		Contents:	<b>P-1050</b>
<b>PURCHASE OF ENVIRONMENTALLY PREFERABLE PRODUCTS (GREEN PURCHASING)</b>		Submitted By:	<b>Purchasing Division</b>
		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	<b>Revised 10-7-09</b>
		Page No.	<b>4 of 8</b>

### County Department Responsibility – General

Under the delegated authority of the County Purchasing Agent, departmental buyers are responsible to evaluate short-term and long-term costs in comparing product alternatives. Through Purchasing Agent agreements, Departments shall be required to:

1. Purchase only Recycled-Content Bond Paper in accordance with the Board of Supervisors instructions of September 7, 1999 instructions to all Departments.
2. Purchase Energy Efficient products in order to conserve electrical power, reduce peak power consumption, lower energy costs, provide market leadership and support energy-efficient purchasing by County government.
3. Review and use "green" product alternatives in County and other authorize government agreements provided on-line at: <http://www.gogreencommunities.org/>

### Remanufactured Products

The County shall purchase remanufactured products such as laser toner cartridges, furniture, and equipment whenever practicable, but without reducing safety, quality or effectiveness.

### Energy and Water Conserving Equipment

Where applicable, energy-efficient equipment shall be purchased with the most up-to-date energy efficiency functions. This includes, but is not limited to, high efficiency space heating systems and high efficiency space cooling equipment.

When practicable, the County shall replace inefficient lighting with energy efficient equipment.

### Energy Star®

Energy Star is a labeling program derived from a partnership between the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Energy (DOE). All products displaying the Energy Star label meet Federal Energy Management Program (FEMP) standards. Typically, this means that labeled products are in the top 25 percent of all similar products when ranked by energy efficiency, and use 25 to 50 percent less energy than their traditional counterparts.

### Solicitation for Equipment or Products

Wherever practicable, when equipment or product purchases where FEMP recommended standards or Energy Star labeled products are available, County departments and agencies are expected to include an Energy-efficiency requirement component to their solicitation to purchase those products that meet the recommended standards. Examples of these products include computers, monitors, printers, photocopiers and facsimile machines.

Title:		Contents:	<b>P-1050</b>
<b>PURCHASE OF ENVIRONMENTALLY PREFERABLE PRODUCTS (GREEN PURCHASING)</b>		Submitted By:	<b>Purchasing Division</b>
		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	<b>Revised 10-7-09</b>
		Page No.	<b>5 of 8</b>

Sample Solicitation Language

“Notice to Bidder: In line with the County policy for the procurement of energy-efficient equipment and products, preference will be given to those products that meet the Federal Energy Management Program (FEMP) standards or possess an Energy Star® label.”

For energy consuming products where there are no FEMP recommended criteria or Energy Star label, departments must consider the purchase products that conserve electrical power and/or natural gas to the maximum extent possible, based on minimum life-cycle costs.

Cost Analysis

Even where energy-efficient products have a higher purchase price than their less efficient counterparts, these products usually save money because they use less energy, often have a longer life, and typically incur less maintenance cost.

These savings, such as from lower energy bills, are achieved throughout the entire lifetime of the product. Thus, when deciding how much money an Energy Star labeled product will save, it is necessary to consider both initial cost (the purchase price) and the costs that will be incurred throughout the life of the product (such as energy and maintenance costs). This is known as Life Cycle Cost.

A listing of Energy Star approved products, as well as the formula for determining Life Cycle Cost is available through the ISD Purchasing web page or by access through the following Internet address:

<http://www.business.gov/expand/green-business/energy-efficiency/calculate-savings/energy-saving-calculator.html>

Benefits

The benefits of purchasing Energy Star labeled and FEMP recommended products include:

- Reduced energy costs without compromising quality or performance
- Significant return on investment
- Extended product life and decreased maintenance

Products purchased by the County, and for which the U. S. EPA Energy Star certification is available shall meet Energy Star certification, when practicable. When Energy Star labels are not available, energy efficient products shall be purchased that are in the upper 25% of energy efficiency as designated by the Federal Energy Management Program.

The County shall purchase water-saving products whenever practicable.

Title:		Contents:	<b>P-1050</b>
<b>PURCHASE OF ENVIRONMENTALLY PREFERABLE PRODUCTS (GREEN PURCHASING)</b>		Submitted By:	<b>Purchasing Division</b>
		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	Revised 10-7-09
		Page No.	6 of 8

Note: Nothing contained in this policy shall be construed as requiring a department to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price in a reasonable period of time.

### Landscaping

Workers and contractors providing landscaping services for the County shall be encouraged to employ sustainable landscape management practices whenever possible, including, but not limited to, integrated pest management, grass-cycling, drip irrigation, composting, and procurement and use of mulch and compost that give preference to those produced from regionally generated plant debris and/or food waste programs.

Plants should be selected to minimize waste by choosing species that are appropriate to the micro-climate species that can grow to their natural size in the space allotted them and perennials rather than annuals for color. Native and drought-tolerant plants that require no or minimal watering once established are preferred.

Hardscapes and landscape structures constructed of recycled content materials are encouraged.

### Toxins and Pollutants

To the extent practicable, no cleaning or disinfecting products (i.e. for janitorial use) shall contain ingredients that are carcinogens, mutagens, or teratogens. These include chemicals listed by the U.S. EPA or the National Institute for Occupational Safety and Health on the Toxics Release Inventory and those listed under Proposition 65 by the California Office of Environmental Health Hazard Assessment.

When maintaining buildings, the County shall use the lowest amount of VOCs (volatile organic compounds), highest recycled content, and low or no formaldehyde when purchasing materials such as paint, carpeting, adhesives, furniture and casework.

The County shall reduce or eliminate its use of products that contribute to the formation of dioxins and furans. This includes, but is not limited to:

- Purchasing paper, paper products, and janitorial paper products that are unbleached or that are processed without chlorine or chlorine derivatives, whenever possible.
- Eliminating the purchase of products that use polyvinyl chloride (PVC) such as, but not limited to, office binders, furniture and flooring, whenever practicable.

### Agricultural Bio-Based Products

Paper, paper products and construction products made from non-wood, plant-based contents such as agricultural crops and residues are encouraged whenever practicable.

Title:		Contents:	<b>P-1050</b>
<b>PURCHASE OF ENVIRONMENTALLY PREFERABLE PRODUCTS (GREEN PURCHASING)</b>		Submitted By:	<b>Purchasing Division</b>
		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	Revised 10-7-09
		Page No.	7 of 8

### Expanded Polystyrene (Styrofoam) Food and Beverage Containers

The properties of Expanded Polystyrene (EPS) make it an inexpensive and effective material for product packaging and food/beverage containers. As a result, 56,000 tons of EPS products (primarily product packaging and food containers), equivalent in volume to over eight Empire State Buildings, enter the marketplace in California annually, with the overwhelming majority either disposed or littered. Once littered, EPS food and beverage containers are easily blown into the County's storm drain system. Their lightweight characteristic enables them to be readily carried downstream into waterways, negatively impacting the environment and wildlife. They also end up entangled in brush, tossed along freeways, and washed up on County beaches. Because EPS crumbles and is often difficult to collect, it is a greater eyesore and nuisance than other littered materials. This littering also impacts recreational areas and the quality of life for residents in Los Angeles County.

Based on the negative impact on the environment, and the significant costs to government associated with prevention, clean-up and enforcement, it is imperative that all County departments implement measures to restrict and/or prohibit the purchase and use of expanded polystyrene (EPS) food containers at all County-owned facilities, County offices, County-managed concessions, and County-permitted and sponsored events.

To this end, County departments are expected to consider and use non-EPS products in their purchasing activities, with emphasis on the following hierarchy for procurement of alternative products:

- Reusable and durable goods
- Biodegradable single-use products, including paper-based single-use products with no petroleum coating
- Recyclable single-use products
- Other non-EPS products

### **Balancing Environmentally Considerations with Performance, Availability and Financial Cost**

Los Angeles County is committed to procuring environmentally preferable goods and services wherever they meet performance standards and requirements of the County at a competitive cost. Nothing in this policy shall be construed as requiring a purchaser or contractor to procure products that do not perform adequately for their intended use, exclude adequate competition, or are not available at a reasonable price or in a reasonable period of time.

However, when comparing product costs, the County does not focus exclusively on the quoted vendor pricing but also the costs over the life of the product, which includes the initial cost along with maintenance, operating, insurance, disposal, recycle or replacement, and potential liability costs. Examining life cycle costs will save money by ensuring we are quantifying the total cost of ownership before making purchasing decisions.

### End-of-Life and Lifecycle Impacts

Numerous studies have confirmed that the end-of-life management of foodservice containers affects their overall lifecycle impact on the environment. Therefore, it is important to take into consideration the ultimate end-of-life management of a product prior to purchase.

Title:		Contents:	<b>P-1050</b>
<b>PURCHASE OF ENVIRONMENTALLY PREFERABLE PRODUCTS (GREEN PURCHASING)</b>		Submitted By:	<b>Purchasing Division</b>
		Approved By:	<b>Purchasing Agent</b>
Effective Date:	<b>06-14-07</b>	Supersedes No.:	Revised 10-7-09
		Page No.	8 of 8

Specifically, alternative products may be reusable, compostable, or recyclable. If none of those three apply, the products will most likely end up disposed. When making purchases, the County will confirm whether infrastructure is in place or could be readily implemented to provide the capability to reuse, compost or recycle the products once purchased. For example, reusable food service ware requires dish washing capability and may require additional storage space, while compostable food service ware may require separate collection containers and a contract for the collection and processing of the materials. The County will, to the maximum extent feasible, utilize the appropriate end-of-life management for the products being purchased in order to minimize the lifecycle environmental impacts of products.

### **Conservation and Waste Reduction**

Wherever practicable and cost-effective, departments are responsible to institute practices that reduce waste and result in the purchase of fewer products without reducing safety or workplace quality.

Examples would include:

- ✓ Using electronic communication instead of printed,
- ✓ Using double-sided photocopying and printing,
- ✓ Using washable and reusable dishes and utensils,
- ✓ Using rechargeable batteries,
- ✓ Streamlining and computerizing forms,
- ✓ Using "on-demand" printing of documents and reports as they are needed,
- ✓ Leasing long-life products when service agreements support maintenance and repair rather than new purchases,
- ✓ Choosing durable products rather than disposable,
- ✓ Buying in bulk, when storage and operations exist to support it,
- ✓ Re-using products such as, but not limited to, file folders, storage boxes, office supplies, and furnishings.

### **Departmental Responsibilities**

Every County department is responsible to ensure that their respective employees, contractors, and vendors are fully aware and supportive of the County's initiative to purchase environmentally preferable goods and services. To this end, departments are responsible to exercise due diligence in their procurement decisions as well procurements made by their contractors and consultants, promoting the purchase and use environmentally preferable products whenever cost effective, and to the extent practicable for all work completed on behalf of Los Angeles County.

**STAKEHOLDER COMMENTS AND PUBLIC WORKS RESPONSES TO  
PROPOSED RECOMMENDATIONS ON EXPANDED POLYSTYRENE  
USE IN THE COUNTY**

Industry Comments

- Our experience shows that bans on polystyrene foam food service containers do not work as intended, as demonstrated over and over in communities that have implemented bans. What is often not discussed once a ban is in place is the fact that the ban typically results merely in litter substitution, and not litter diversion. . . . Litter is litter — there is no environmentally friendly litter.
- The findings in the draft reports are based on an infrastructure for composting/recycling that does not exist today without big investments which County of Los Angeles does not plan to make. Switching to alternative products that have a higher environmental footprint than expanded polystyrene in order to be composted or recycled will not result in any environmental improvement.
- We do not support government policies that are aimed at promoting one foodservice packaging material or product over another by way of bans or taxes or other regulatory schemes.
- The increased costs the County will incur for the replacement foodservice products, along with little if any overall environmental benefit of those alternative foodservice products (given their current end of life as well as full lifecycle impacts) hurts both County of Los Angeles agencies and Los Angeles residents at a very critical fiscal time for Californians.

Environmental Organization Comments

- The hierarchy scheme for preferred alternatives to EPS food containers, which ranks compostable products above recyclable products, may be misleading in terms of environmental impacts. Studies have shown biodegradable plastics do not degrade in ocean water...Compostable products need the right conditions only present in commercial composting facilities that support the temperature and bacteria conditions necessary to break down these products into constituents that can assimilate back into the environment.
- The County of Los Angeles currently lacks the infrastructure to effectively and responsibly collect and dispose of biodegradable and compostable products.

- We ask that the County pursue EPS prohibitions at businesses such as restaurants within the County. The proposal falls short as it does not include a motion to ban EPS food containers at all retail establishments throughout Los Angeles County, but instead recommends conducting semi-annual reports and tracking the progress of the facility ban. This delay in implementation is unnecessary.

DPW Responses

DPW considered and, as appropriate, incorporated the comments in the DPW and RPN documents as well as the draft recommendations. The following highlights summarize how the comments above were sufficiently addressed:

- The draft recommendations place the use of durable reusable products at the top of the product preference hierarchy, since they have the least negative net environmental impact due to durability, useful lifespan, nature of use, and recyclability. To the extent that EPS food products are replaced with reusable products, there would be a reduction in the amount of litter generated.
- The next most preferred alternative products in the product preference hierarchy are compostable products. When littered, compostable alternative products can degrade into beneficial biological elements that positively affect the environment and food chain.
- Unlike biodegradable alternatives, our analysis found that EPS continues to release toxins into the environment as it breaks apart into smaller pieces. In addition, since EPS is made from petroleum, it persists in the environment far longer than other materials, even if they are littered at the same rate.
- In addition, shifting to environmentally preferable alternatives, when coupled with even modest public education efforts to explain the switch, should raise awareness of customers and lead to increased use of reusable products, reduction in litter and other environmental benefits, such as reduced blight and less toxic litter.
- The County has an active and successful departmental recycling program, and assistance will be provided to incorporate appropriate infrastructure, if needed, to recycle or compost materials collected by departments to the extent feasible.
- Although there are currently no commercial scale composting facilities within County of Los Angeles, the County has actively promoted composting at all levels, from backyard composting to commercial scale projects, and will continue to promote local markets for compostable and biodegradable products.
- Lastly, we will continue to evaluate alternative products, and make adjustments to the hierarchy as appropriate, as new information becomes available.

## ENCLOSURE VI

### Departments Readiness to Use Alternative Food Containers

<u>Department</u>	<u>Food Service</u>	<u>Date of Transition</u>
Beaches and Harbors	14 concession agreements at 13 beach sites and 1 Marina del Rey site, as well as Gladstone's 4 Fish restaurant	Within 60 days of Board action
	Beach use permits	Beginning Jan. 2011
Chief Executive Office	Catering trucks and snack shops	June 2011
Community & Senior Services	23 contracts for the Congregate Meals & Home Delivered Meals Program	July 2012
Health Services	Five (5) County hospital contracts for the cafeteria and patient rooms	December 2010
Parks & Recreation	Concession agreements and golf courses	June 2011
Probation	Three (3) food services contracts at Juvenile Halls; one (1) food services contract at a Camp facility	May 2012 October 2015
Sheriff	Contract for inmate facilities will continue using EPS food containers while implementing an EPS food container recycling program	

All departments not listed above either do not utilize EPS food containers in their operations or have already transitioned to alternative products.

Industry representatives, including Pactiv Corporation, American Chemistry Council, and the Foodservice Packaging Institute, have expressed concerns regarding the recommendations above. Comments were also received from environmental organizations. The concerns and comments are detailed in Enclosure V as well as Public Works responses.