



Expanded Polystyrene Food Service Take-Out Container Study

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Executive Summary

The City of Milpitas hired Cascadia Consulting Group to prepare a study on the options for reducing expanded polystyrene food service take-out containers in the waste stream. Expanded polystyrene, also referred to as EPS, or by the trade name Styrofoam™, is commonly used for food take-out containers and beverage cups due to its excellent ability to maintain heat and cold and its low cost per unit. Based on concerns regarding the impacts of polystyrene in the environment, a number of municipalities in California and other states have banned expanded polystyrene food service take-out containers or implemented programs to reduce the use of specific polystyrene products.

Because a polystyrene food service container ban would affect many businesses, the City of Milpitas commissioned this study to research similar programs elsewhere, identify the major economic and procedural considerations, and assess potential support or opposition among Milpitas businesses and residents.

The conclusions presented in this document are based on background research, interviews, and information identified during the research phase of this project. These conclusions are intended to inform implementation of a single-use bag ban if the City of Milpitas decides to adopt one.

Methods

On behalf of the City of Milpitas, Cascadia Consulting Group undertook nine specific research tasks. At the City's direction, Cascadia reviewed the efforts of approximately 15 California cities to regulate the replacement of polystyrene containers with recyclable or compostable alternatives. We targeted our research on a sub-set of these cities: Fremont, Hayward, Millbrae, Monterey, Oakland, Palo Alto, Santa Cruz, and San Francisco. Additionally, we included information from programs in Seattle and Issaquah, Washington. Cascadia also interviewed food service businesses in Milpitas, surveyed 293 Milpitas residents by phone, and interviewed organizations that have lobbied for or against polystyrene bans.

Findings

The key findings of this research are presented by individual research task.

1. Polystyrene Bans in Other Jurisdictions

- **Cities often implement bans in phases, beginning with businesses and organizations that primarily operate as “food providers.”**
- **Some cities provided businesses with only informational materials, while others had a larger budget to offer site visits of other assistance to businesses. Some cities said that site visits were key to making businesses feel supported in their switch to alternative products.**
- **Although limited outcome information is available, reports have found high compliance rates in cities with bans as well as increasing availability of alternative products.**

- **Cities interviewed that replaced a voluntary program with a ban noted that a significantly larger number of businesses switched to alternatives to polystyrene after compliance became mandatory.**
- **Many ordinances reviewed included justifications for the ban, including the specific impacts of polystyrene such as litter in waterways, beaches, and public works infrastructure.**

2. Potential Economic Impacts

- **Alternative containers cost more than polystyrene.**
- **Jurisdictions can help businesses reduce cost impacts by identifying local suppliers and establishing a purchasing co-op for small businesses.**
- **Containers contaminated by food must usually be washed prior to recycling, increasing processing costs.** Rigid recyclable alternatives, such as crystalline polystyrene, are easier to wash than foam, such as expanded polystyrene.
- **Compostable alternatives, such as paper or bioplastics, that are contaminated with food can be composted along with food scraps, requiring no pre-washing.**

3. Alternative Materials for Food Service Containers

- **Alternative products are available for most applications where food service polystyrene is currently used.**
- **Some products types are more available in alternative materials than others;** phasing implementation by product type can help businesses comply given limited availability of some products.
- **If Milpitas implements a ban, the City should offer food scrap and container composting to businesses and residents.** In the absence of food scrap and compostable container composting collection programs, these materials will be disposed as garbage.

4. Types of Polystyrene Products to Regulate

- **Jurisdictions should initially limit the ban to food containers while excluding utensils.** Other cities with food service container regulations in place have successfully regulated all expanded polystyrene containers with reasonable alternatives in place and have put temporary exemptions on single use plastic utensils.
- **If Milpitas implements a ban, the City should cover food providers while allowing time-limited exemptions for undue hardship.** Other cities have successfully regulated expanded polystyrene take-out containers from food service businesses and have allowed exemptions to businesses that can prove that compliance would cause their business undue harm.

- **Outreach on a polystyrene ban should focus on educating and assisting small businesses.** Based on Cascadia’s interview of businesses that may be affected by a polystyrene ban in Milpitas, small businesses would most benefit from outreach.

5. Enforcement Policies and Procedures

- **Enforcement approaches can be scaled to the level of effort appropriate.**
- **A long (up to one year) phase-in period with outreach increases the success of compliance and reduces the amount of enforcement required.**
- **Site visits to confirm that businesses are complying will help with enforcement of the ban.**
- **Citizen complaints are an effective way to supplement the enforcement process and create awareness among the community.**
- **Education and outreach is a key component of achieving compliance.**

6. Alternatives to a Polystyrene Ban

- **Recycling of food-contaminated expanded polystyrene is not currently available in Milpitas.** Food contamination and the material’s low density pose challenges to cost-effective collection, transport, and processing of expanded polystyrene food containers.
- **In cities researched, voluntary reduction programs achieved lower compliance rates than mandatory bans while still requiring an extensive investment in education and outreach.**
- **Reducing the costs of alternatives to be comparable to expanded polystyrene would address a primary barrier to voluntary polystyrene reductions; however the City must consider its ability to provide sufficient financial incentives to achieve cost parity.**

7. Interviews with Key Stakeholders

Interviews with 25 restaurants and other food providers and with stakeholders from the American Chemistry Council, Save the Bay, and the California Restaurant Association found the following:

- **Over half (15 out of 25) businesses interviewed supported a City ban on expanded polystyrene.**
- **Business owners said that educating Milpitas residents about the ban would be important so that they continue to support local establishments.**
- **Stakeholders interviewed who expressed concerns about a ban mentioned the cost and performance of alternatives, net environmental effects, and the need for composting infrastructure if compostable alternatives are mandated.**
- **Stakeholders opposed to a ban suggested promoting a general recycling message and recycling expanded polystyrene. Ban proponents said that local haulers have not included food service containers in their proposed recycling program for expanded polystyrene.**

- **Representatives from two stakeholder groups recommended implementing strong outreach and education efforts if the City decided to ban expanded polystyrene.**

8. Results of a Survey of Residents

A survey of 293 Milpitas residents found the following:

- **About 70% of residents surveyed said they would approve of a ban on polystyrene food service take-out containers.**
- **Half (50%) of Milpitas residents surveyed stated they would continue to support a business that had to increase their prices to cover costs of complying with a polystyrene take-out container ban, while nearly a quarter (23%) said they would not support such a business.**
- **A majority of respondents reported that they would take some action if they saw non-compliant businesses, such as mentioning the ban to the non-compliant business (34%), stopping shopping at the businesses (15%), or reporting the business to the City (7%).**
- **About a third (33%) of respondents reported that non-compliance would not affect their shopping habits.**

9. Stakeholder Outreach and Public Awareness

- **Should Milpitas choose to pursue a ban, the City should involve stakeholder early in the process, maintain transparency, use clear and consistent messages, provide information electronically, conduct outreach in a variety of languages, and emphasize education over enforcement.**
- **Although more expensive, an active outreach approach is usually also more effective than providing only written information.** Similarly, providing informational materials to all affected parties is more effective than targeting only businesses or only consumers.

Organization of this Report

The City contracted with Cascadia Consulting Group to conduct research in nine specific task areas. The main body of this report is organized into nine sections corresponding to these tasks, as follows:

1. Review polystyrene bans in other jurisdictions.
2. Assess potential economic impacts.
3. Review alternative food service containers.
4. Recommend types of polystyrene products to regulate.
5. Research enforcement policies and procedures.
6. Evaluate alternatives to a polystyrene ban.
7. Conduct interviews with stakeholders.
8. Survey Milpitas residents.
9. Develop an outreach and awareness campaign plan.

Each section outlines the task objectives, our methods for conducting the research, major findings, and overall conclusions. Research data supporting findings and conclusions is provided in appendices.

1. Review Polystyrene Bans in Other Jurisdictions

This section describes Cascadia’s research on expanded polystyrene food service take-out container bans adopted and implemented by other jurisdictions in California and elsewhere. It identifies the food service providers impacted, the outreach approaches used, measureable outcomes, and other guidance.

Methods

Cascadia’s research focused on cities in the Bay Area and Washington State that have successfully pursued polystyrene food service take-out bans. California cities included Berkeley, Fremont, Hayward, Millbrae, Monterey, Oakland, Palo Alto, Santa Cruz, and San Francisco; Washington cities included Issaquah and Seattle. Cascadia reviewed ordinances and outreach materials as well as conducted interviews with city staff members to better understand effective practices.

Appendix 1.1. California Cities that have Pursued a Polystyrene Ban presents a complete list of jurisdictions in California that have implemented a polystyrene ban.

Findings

Cities reviewed often **implement their polystyrene bans in phases**, starting with businesses that are primarily engaged in providing food. Many of these cities initially targeted “food providers,” meaning any business, organization, group, or individual that offers food or beverages for sale to the public. After bringing food providers on board with the program, many cities targeted other business types that serve food or purchase polystyrene food take out containers, even though these businesses do not primarily focus on food service. The food providers that are most commonly covered by polystyrene bans in cities reviewed are supermarkets, delicatessens, restaurants, retail food vendors, caterers, sales outlets, shops, cafeterias, catering trucks, outdoor vendors, food trucks, city facilities, and special large events. A few cities have required that suppliers of take-out containers certify that the shipment does not include polystyrene containers. This requirement gives food service businesses written proof of their compliance.

Cities researched for this study typically provide **outreach to affected businesses and their customers**. For affected businesses, cities explained the ban and options for transitioning to alternative materials. Some cities also targeted customers—the general public—to explain the ban. In some cases, cities researched promoted businesses that comply and encourage consumers to support those businesses.

Many **outreach programs provided written information** to businesses and their customers without personal interaction. Some cities provided businesses with the information resources needed to comply with the ban and educate customers, but these cities did not reach out to businesses to provide training or similar in-person guidance on ban compliance. Informational resources can be provided at a lower cost than more active outreach involving phone calls and site visits.

Some **communities with larger budgets have pursued more active outreach**. City staff or hired contractors worked with targeted businesses to help them transition from polystyrene take-out containers to alternatives, including selecting the most appropriate and most cost-efficient alternatives. Some cities that provided these outreach services noted that visits to businesses to inform them about the ban were key to making businesses feel supported in their switch to alternative products.

Most polystyrene bans have come into effect only in the past few years, so limited information is available on measurable outcomes of the bans. Available information includes:

- Affected businesses have high compliance rates of 94% in San Francisco (SFEnvironment) and about 95% in Palo Alto (Reigel).
- Alternative products are becoming more available and prices are gradually lowering in San Francisco (City of Monterey).
- The composition of litter has shifted from polystyrene and to alternative container types (HDR).

Cities, such as San Francisco and Santa Cruz, that attempted voluntary polystyrene use reduction programs before bans noted that businesses were much more likely to switch to alternative materials types when the city made the program mandatory. The threat of fines for noncompliance gave teeth to the cities' bans, even if only a handful of fines (if any) were issued. According to the ordinances reviewed and interviews with staff members, cities reported adopting polystyrene bans for a variety of reasons including:

- When lightweight polystyrene is blown or washed into creeks, it eventually makes its way into the ocean. Polystyrene is slow to degrade, and when it does, it resembles food to marine organisms that eat but cannot digest it (City of San Francisco).
- Polystyrene is commonly found in storm drains and catch basins, and it is an abundant type of marine debris(City of Palo Alto Public Works).
- Polystyrene take-out containers litter on beaches can be a visual deterrent for visitors; this is especially important for cities that rely on tourism to stimulate their economy (City of Monterey).

Appendix 1.2. Environmental and Social Reasons for Banning Polystyrene presents more detailed findings on the reasons cities have adopted bans on polystyrene in their communities, the outreach methods cities have pursued, measurable outcomes, and details on Berkeley's outreach to food service container suppliers.

Conclusions

- **Cities often implement bans in phases, beginning with businesses and organizations that primarily operate as "food providers."**
- **Some cities provided businesses with only informational materials, while others had a larger budget to offer site visits of other assistance to businesses. Some cities said that site visits were key to making businesses feel supported in their switch to alternative products.**
- **Although limited outcome information is available, reports have found high compliance rates in cities with bans as well as increasing availability of alternative products.**

- **Cities interviewed that replaced a voluntary program with a ban noted that a significantly larger number of businesses switched to alternatives to polystyrene after compliance became mandatory.**
- **Many ordinances reviewed included justifications for the ban, including the specific impacts of polystyrene such as litter in waterways, beaches, and public works infrastructure.**

2. Assess Potential Economic Impacts

Businesses faced with polystyrene bans frequently express concerns regarding the cost of complying with the ban. This section describes research on the potential economic impacts of an expanded polystyrene food service take-out container ban in Milpitas.

Methods

Based on concerns most frequently mentioned in a survey of businesses in Milpitas, we reviewed available data regarding the economic impacts to businesses and other stakeholders in cities with a ban in place.

Findings

The success of a ban is affected by two economic factors: the cost and availability of alternative products and the cost and needed infrastructure for processing alternative materials compared to expanded polystyrene.

Cost of Alternative Materials

Products made from alternative materials cost more than polystyrene containers. However, the unit pricing is steadily dropping as more businesses use alternative materials. The costs of alternative materials vary depending on where a business purchases materials and on what items a business chooses to purchase. Table 1, presents a study conducted in Seattle regarding the cost of polystyrene materials compared with alternatives. *Section 3. Identify and Evaluate Impacts of Preferred Alternative Materials for Food Service Take-Out Containers* offers more information on cost differences between polystyrene and alternative containers.

Appendix 2.1. Price Comparisons presents another study comparing the costs of polystyrene and alternative products, performed by Restaurant Depot, a food service container supplier in Seattle, Washington.

To assist businesses, **some cities provide a list of local suppliers that offer approved alternatives** to polystyrene serve ware to aid the transition to these alternatives. The list should include local vendors, which could reduce the cost of shipping, thus lowering economic barriers to a polystyrene ban. Bulk purchasing can also be cost-effective and is a strategy widely used by chain restaurants, supermarkets, and retail establishments.

Many of the chain businesses that Cascadia interviewed (including McDonalds, Noah's Bagels, Red Lobster, and Burger King) already offer alternative take-out container types to customers. As a result, these large businesses may not notice a significant financial burden at the outset of a ban. However, the

smaller, independent businesses we interviewed reported the purchasing of alternative take-out container types to be cost-prohibitive.

Because small businesses may have limited access to bulk suppliers, **some cities have established a purchasing co-op** to help small businesses purchase alternative products in bulk during and after this transition. GreenTown Los Altos, a grassroots environmental group in the City of Los Altos, has established a co-op through which businesses that purchase alternatives from a certain supplier receive a 25-percent discount on their purchase (GreenTown Los Altos).

Table 1. Cost of Food Service Products (cost per single item)

	Cups	Plates	Clamshell
Compostable			
	Corn-Based Cold Cup	9" Biodegradable Plate	8" Compostable Hinged Clamshell (PLA)
	\$0.13	\$0.15	\$0.72
Recyclable			
	Plastic Cold Drink Cups	8 1/2" Paper Plate	Easy-Lock
	\$0.11	\$0.06	\$0.25
Expanded Polystyrene			
	Insulated Foam Cups	9" Foam Plate	Foam Container
	\$0.04	\$0.05	\$0.11

Source: Stephanie Terrell, Cascadia Consulting Group.

Cost of Processing Polystyrene Compared to Alternative Materials

In considering a ban on expanded polystyrene food containers, Milpitas should evaluate the cost of recycling expanded polystyrene food containers compared to the cost of recycling and composting alternative products. Costs vary but are affected by the factors discussed below.

Although clean polystyrene is readily recyclable, **food contamination can be a costly barrier to recycling**. A few food-contaminated containers could make an entire load of expanded polystyrene non-recyclable. Contaminated containers can be washed, but this would increase the cost of recycling. **Alternative recyclable materials that are rigid, such as crystalline polystyrene, are easier to wash** than expanded polystyrene foam. Allied Waste’s Newby Island recycling facility currently accepts crystalline polystyrene and aluminum food service containers that are contaminated with food, but not food-contaminated expanded polystyrene.

In contrast, **compostable containers that are contaminated with food can be composted with food scraps**. Because Milpitas does not currently have a food scrap collection program, compostable materials must now be disposed as trash. However, the composting facility that serves Milpitas (Allied Waste’s Newby Island facility) is able to process food scraps and food-contaminated compostable containers. If the Milpitas imposes a polystyrene ban, **the City should offer composting for commercial food scraps and containers to both businesses and residents**.

Conclusions

- **Alternative containers cost more than polystyrene.**
- **Jurisdictions can help businesses reduce cost impacts by identifying local suppliers and establishing a purchasing co-op for small businesses.**
- **Containers contaminated by food must usually be washed prior to recycling, increasing processing costs.** Rigid recyclable alternatives, such as crystalline polystyrene, are easier to wash than foam, such as expanded polystyrene.
- **Compostable alternatives, such as paper or bioplastics, that are contaminated with food can be composted along with food scraps, requiring no pre-washing.**

3. Review Alternative Food Service Containers

This section describes the main characteristics of alternative products, to assist Milpitas and businesses identify appropriate alternatives to polystyrene containers, as well as some considerations when switching to alternative containers.

Methods

Cascadia identified alternatives to expanded polystyrene food service take-out containers by contacting cities that have enacted bans on polystyrene containers. We researched information provided by product manufacturers to determine whether the products have the appropriate characteristics for use in food service.

Findings

Four primary product material types were identified:

- **Bagasse** is made from processed sugar cane.
- **PLA bioplastics** are primarily derived from corn but can also be made from other materials (for example, Taterware is made from potato starch).
- **Paperboard** containers are made from paper fiber.
- **Crystalline polystyrene** and **expanded polystyrene** (foam) are petroleum-based products.

Table 2 describes the heat tolerance, sterility, compostability or recyclability, and safe use in a microwave or freezer of each material. These characteristics help businesses select which products work best for specific applications. A list of the most commonly used terms and their definitions is provided in *Appendix 3.1. Definitions of Material Types and Characteristics*.

Table 2. Characteristics of Alternative Materials

Material Type	Heat Tolerance	Sterile	Compostable or Recyclable	Microwave and Freezer Safe
Bagasse	Up to 200 degrees Fahrenheit; moisture forms at the bottom of the container for hot items. (World Centric)	Sterile according to US FDA guidelines (World Centric)	Compostable (World Centric)	Both freezer and microwave safe (World Centric)

Material Type	Heat Tolerance	Sterile	Compostable or Recyclable	Microwave and Freezer Safe
Bioplastics (PLA)	Dependent on resin but can generally hold food up to 200 degrees Fahrenheit (World Centric)	Yes, approved for use in containers in contact with food by the FDA (Chemistry Research and Environmental Review, 2001)	Compostable (World Centric)	Freezer safe; not microwave safe (World Centric)
Paper-based (paperboard, etc.)	Up to 200 degrees Fahrenheit. (Moisture may form at bottom of the container for hot items.) (World Centric)	Sterile according to US FDA guidelines. (World Centric)	Compostable. (World Centric)	Both freezer and microwave safe (World Centric)
Crystalline Polystyrene	For cold service only	Approved as sterile by the FDA.	Recyclable if food contamination is minimal	Freezer safe; not microwave safe.
Expanded Polystyrene	Up to 216 degrees Fahrenheit. (Styron , 2010)	Approved as sterile by the FDA. (Paper Mart)	Recyclable, but not accepted if contaminated by food. (Dow Chemical Company , 2006)	Freezer safe; not microwave safe.

Considerations for Changing Container Types

Product Availability

Some product types are more readily available in alternative materials than others. Food providers may more easily make the switch gradually rather than all at once. One option would be to establish temporary exemptions for products that are less available, with the exemptions ending at a fixed time (such as after one year) or when some defined availability threshold is achieved.

After implementing a ban, most cities delay enforcement until after a phase-in, outreach period to give businesses to learn about the ban and its requirements, purchase appropriate alternative take-out container types for their businesses, and use up their current stock of soon-to-be banned containers. After the phase-in period, cities often continue to offer outreach and support but also may begin to

issue fines to noncompliant businesses. The cities interviewed by Cascadia noted that businesses are more receptive to the ban when they feel the city is working to ensure that the transition is as easy as possible.

Appendix 3.2.1 Suppliers of Compostable Alternative Container Types and *Appendix 3.2.2 Suppliers of Recyclable Alternative Container Types* present lists of alternative product suppliers. The list provides information about vendors that offer recyclable or compostable alternatives to polystyrene, by product type (such as bowls and plates).

Product Recyclability and Compostability

Even when products are recyclable or compostable, Milpitas and businesses should consider whether they are accepted by available collection programs. Businesses residents in Milpitas currently receive garbage, recycling, and composting collection from Allied Waste Services. Allied Waste's Newby Island Facility does not accept food-contaminated expanded polystyrene, although it does accept food-contaminated crystalline polystyrene and aluminum. While Allied Waste's Newby Island composting facility processes food scraps and food-contaminated compostable containers from elsewhere, Milpitas residents and businesses cannot include these materials in their compost collection containers. If the City implements an expanded polystyrene ban, it should offer food scrap and food-soiled container composting for both businesses and residents.

Process to Switch Product Types

Some businesses expressed a concern that they would not have time to train staff people to comply with a polystyrene ban. After an initial surge of reminders, signage, fliers, and other outreach materials in stores, staff should be accustomed to the additional requirements of the ban. Although these requirements represent mostly a shift in work rather than additional work, staff will need to:

- Label front-of-house containers correctly for composting, recycling, and garbage.
- Sort compostable containers from garbage (depending on the requirements of the ban).
- Dispose materials from front- and back-of-house containers in the correct outside containers for collection.
- Updating signage, brochures, and other reminders around the store as the city distributes new outreach material.

Conclusions

- **Alternative products are available for most applications where food service polystyrene is currently used.**
- **Some products types are more available in alternative materials than others;** phasing implementation by product type can help businesses comply given limited availability of some products.
- **If Milpitas implements a ban, the City should offer food scrap and container composting to businesses and residents.** In the absence of food scrap and compostable container composting collection programs, these materials will be disposed as garbage.

4. Recommend Types of Polystyrene Products to Regulate

A successful expanded polystyrene food service take-out container ban would prohibit only those products for which reasonable alternatives exist, and it should cover the appropriate types of businesses. This section reviews products that could be banned and which types of businesses could be regulated.

Methods

The findings that follow are informed by the businesses and material types observed during the Milpitas business surveys, as well as by research on other cities that have regulated expanded polystyrene food service take-out containers. Each section addresses the initial implementation phase (based on ease of regulation) and implementation after the ban has been in place for a year (more difficult to manage items and businesses).

Findings

Products to Regulate

The ban should initially **target expanded polystyrene products for which readily available and acceptable alternatives exist**. In most of the bans we researched, these items generally included all food containers and excluded food service ware “accessories” such as utensils. Food containers typically include expanded polystyrene hinged and lidded containers (also known as clamshells), hot and cold cups, bowls, plates, and trays.

Biodegradable alternatives for accessories such as utensils either do not compost effectively in most local systems or do not currently exist. As a result, if Milpitas implements ban, the city should provide a **temporary exemption to allow use of utensils until a suitable alternative is identified**.

If the City pursues a ban, early in the stakeholder process it should **gather suggestions about other food service ware items** that do not have compostable or recyclable alternatives and add these to the list of products receiving temporary exemptions. Annually, the City should re-evaluate whether alternatives to these exempt materials have entered the market. If they have, the City should amend its ban to include these items.

Businesses to Regulate

The City should regulate food service polystyrene take-out containers from **all food providers**. “Food provider” means any persons providing food within the City for public consumption, on or off its premises, and includes (but is not limited to) the following business types: supermarkets, delicatessens,

restaurants, retail food vendors, caterers, shops, cafeterias, catering trucks, outdoor vendors, City facility users, and special large events.

In Cascadia's interviews of food service businesses in Milpitas, we found that most chain restaurants were already using alternatives to polystyrene take-out containers. Milpitas should still reach out to chain food service providers to ensure that they are in compliance with the ban. However, we recommend that the City **spend the majority of its resources aiding small food service business**, providing education and assisting them with achieving compliance. The small businesses in Milpitas that were interviewed expressed concerns about the cost and complexity of implementing a ban. To address these concerns, the City should target small food service businesses with support. We suggest that the City offer exemptions to businesses that can demonstrate that compliance with the ban would cause undue hardship for financial or other reasons. These exemptions should last a limited time, such as one year; after a year, the businesses should either comply with the ban or provide evidence that compliance would still cause their business undue hardship.

Conclusions

- **Jurisdictions should initially limit the ban to food containers while excluding utensils.** Other cities with food service container regulations in place have successfully regulated all expanded polystyrene containers with reasonable alternatives in place and have put temporary exemptions on single use plastic utensils.
- **Should Milpitas choose to pursue a ban, the ban should cover food providers while allowing time-limited exemptions for undue hardship.** Other cities have successfully regulated expanded polystyrene take-out containers from food service businesses and have allowed exemptions to businesses that can prove that compliance would cause their business undue harm.
- **Outreach on a polystyrene ban should focus on educating and assisting small businesses.** Based on Cascadia's interview of businesses that may be affected by a polystyrene ban in Milpitas, small businesses would most benefit from outreach.

5. Research Enforcement Policies and Procedures

Appropriate enforcement policies and procedures are critical to achieving compliance with a polystyrene ban. This section describes research on enforcement options, penalties, and costs for polystyrene food service take-out container ban programs in cities in California and elsewhere.

Methods

Cascadia's research focused on California cities that have adopted polystyrene bans, including the cities of Berkeley, Fremont, Hayward, Millbrae, Monterey, Oakland, Palo Alto, Santa Cruz, and San Francisco; our research also examined programs in Seattle and Issaquah, Washington. We reviewed polystyrene ban ordinances and conducted interviews with city staff to better understand successes and failures. *Appendix 5.1. Existing Enforcement Procedure Information* provides details from these cities' ordinances.

Findings

Jurisdictions reviewed typically enforce polystyrene bans either through site visits by city staff members to verify compliance or through non-compliance complaints by citizens received through a customer service hotline or a form on the city's website. Encouraging citizens to notify the city can help raise awareness in the community and save staff resources; however, most of the cities researched verify customer complaints with site visits by city staff. Cities we researched reported that either enforcement mechanism can be effective. Using city staff members that are already visiting businesses for another reason can be efficient and avoid duplicate trips.

Ordinances in the cities researched include a variety of penalties to support enforcement including a written warning, a fine (up to \$1,000), imprisonment, or a combination of a fine and imprisonment.¹ Typically each day a violation is committed (i.e., banned materials are used in the business) is considered a separate offense. As an alternative to paying fines, some jurisdictions allow the violator to submit receipts demonstrating that after the citation date they purchased an equivalent dollar amount of acceptable alternative products.

Costs for enforcement vary depending on the type of assistance and outreach efforts. Cities typically scale their enforcement programs to the resources they have available. Several cities noted the value of having staff members who are already visiting a business for other program also distribute materials regarding the ban and assess and encourage compliance.

Non-compliance may be an issue among businesses that do not understand the purpose of the polystyrene ban or those that view the ban as unfair. Communication and outreach with businesses can lead to greater understanding and support, thus improving compliance. In interviews, staff members from the Cities of Santa Cruz and Palo Alto both attributed high compliance rates to outreach and constant communication with both businesses and the public.

¹ Cascadia does not know of any jurisdiction that has imprisoned violators.

Although the cities we researched have the infrastructure (such as an ordinance, enforcement protocols, and fines) to enforce the ban, most businesses in those cities comply without enforcement actions. Between the outreach efforts, such as site visits and stakeholder meetings, and a lengthy phase-in period, the businesses in these cities were complied without enforcement action taken. During our interview, the staff member at the City of Palo Alto stated that a long phase-in period allowed businesses to anticipate the ban and, thus, achieve acceptance and compliance. Most of the cities we researched focused on outreach and assistance efforts to help achieve compliance instead of on issuing monetary fines.

Although the cities researched saw a high compliance rate at the beginning of the ban implementation, the compliance rate may decline without enforcement. As an example, the City of Seattle had a very high compliance rate initially; however, site visits performed by Cascadia on behalf of the city showed that many businesses had reverted to polystyrene use due to the cost and lack of enforcement.

Conclusions

- **Enforcement approaches can be scaled to the level of effort appropriate to Milpitas.**
- **A long (up to one year) phase-in period with outreach will increase the success of compliance and reduce the amount of enforcement required.**
- **Site visits to confirm that businesses are complying will help with enforcement of the ban.**
- **Citizen complaints are an effective way to supplement the enforcement process and create awareness among the community.**
- **Education and outreach is a key component of achieving compliance.**

6. Evaluate Alternatives to a Polystyrene Ban

Opponents of bans on expanded polystyrene food containers have suggested alternatives including offering a program to recycle expanded polystyrene food containers and encouraging voluntary use of non-polystyrene food containers. This section presents a summary of Cascadia’s assessment of the benefits and drawbacks of each potentially viable option. *Appendix 6.1. Further Evaluation of Alternatives* presents an in-depth evaluation of each alternative.

Methods

Cascadia reviewed alternatives to polystyrene bans that other cities have pursued or that opponents to an expanded polystyrene food service take-out container ban have proposed as viable.

Findings

Alternative 1: Recycling Expanded Polystyrene Food Containers

Recycling expanded polystyrene food containers decreases the quantity of the material in the waste stream (garbage). To be effective, recycling programs must collect a sufficient quantity of the target material and process it into a commodity with a quality and price acceptable to companies that are willing make a new product out of the material. Expanded polystyrene’s low density poses challenges in collection and transport. Food contamination of expanded polystyrene food containers increases recycling costs because the material must be cleaned prior to processing. Manufacturers can use recovered expanded polystyrene to make other products but not food containers. At present, food-contaminated expanded polystyrene recycling is not available in Milpitas.

Table 3. Benefits and Drawbacks of Recycling Polystyrene

Recycling of Polystyrene	
Benefits	Drawbacks
Recovered polystyrene can be used to manufacture items such as trays, picture frames, office supplies, packing filler, combs, rulers, pens, playground equipment, and foam insulation board.	Polystyrene take-out food containers cannot be recycled back into food containers, so new polystyrene containers must be manufactured from virgin resources.
Recovering polystyrene from the waste stream conserves landfill space and resources.	Expanded polystyrene food containers are difficult to recycle because food contamination requires extensive cleaning. Additionally, expanded polystyrene’s low density raises transportation costs and requires collectors to amass a large volume of the material for it to be economical to handle. Uncontrolled expanded polystyrene also has a high potential to become windblown litter.

Alternative 2: Voluntary Polystyrene Reduction by Businesses with an Extensive Outreach and Education Program

In place of a mandatory ban, businesses may voluntarily discontinue the use of polystyrene products through a public education program. A voluntary program would need to educate businesses and customers about the issue, motivate businesses to take action, and motivate customers to support businesses that voluntarily reduce polystyrene use. A public outreach and education program should be designed to achieve the complementary goals of reduced polystyrene use by businesses and reduced demand for polystyrene (or increased demand for alternative) by customers. Public outreach and education programs could use one or more of the following outreach tactics:

- Community-based social marketing
- Website development to promote polystyrene alternatives
- Workshops
- Site visits
- Recognition program for participating businesses
- Media coverage or press releases
- Community newsletters
- Campaigns to promote alternatives to polystyrene and/or recycling opportunities

Table 4. Benefits and Drawbacks of a Voluntary Polystyrene Reduction Program

Voluntary Polystyrene Reduction Program	
Benefits	Drawbacks
Businesses can choose which products to use, including expanded polystyrene, rather than being forced to comply with a ban.	As long as polystyrene products are less expensive and serve the intended purpose, businesses may choose not to use alternative products.
No enforcement program needed because no compliance requirements.	Additional outreach and education, beyond what would be required with a ban, are needed to effect a change in behavior.
Reduces the opposition of stakeholders who oppose bans and who may sue the City for enacting a mandatory ban.	In cities researched, voluntary polystyrene reduction programs generally achieved lower compliance rates compared to mandatory bans.
No delay in implementation due to lawsuits or other challenges, besides the outreach process to convince people to voluntarily reduce their use.	

Alternative 3: Focus on Reducing the Cost of Polystyrene Alternatives

In Issaquah, Washington, the Chamber of Commerce CEO Matt Bott reported that the major concern among businesses is cost. Among cities that Cascadia interviewed, all those that pursued a ban cited cost factor as a primary concern in the business community. Food service businesses often prefer expanded polystyrene because it is cheaper than the alternative products. According to Mr. Bott, nearly every business he spoke to about polystyrene packaging said that they would immediately switch to alternative products without a ban if the prices were comparable. However, prices for alternative products are often higher; for example, some Seattle restaurant owners interviewed reported that using compostable products raised their container costs by 35 to 40 percent.

To make recyclable and compostable products more cost comparable to polystyrene products, the City could:

- Create a co-op from which businesses can buy recyclable and compostable products in bulk.
- Develop outreach materials or a website to promote alternative products to businesses, increasing the market and possibly driving prices down.
- Provide financial incentives for businesses to use alternative products.
- Provide incentives for alternative product suppliers who conduct business in the City.

Table 5. Benefits and Drawbacks of Reducing Costs of Polystyrene Alternatives

Reducing Costs of Polystyrene Alternatives	
Benefits	Drawbacks
Addresses a primary barrier to reducing polystyrene use by making alternatives more affordable for businesses.	Requires education and outreach program as well as staff time to develop co-ops or manage incentive programs.
Brings additional business to suppliers of alternative products.	City incurs direct costs of providing financial incentives to food businesses or product suppliers
	City must be cautious in promoting or providing funds for any one product over another. Could face opposition from stakeholders for promoting alternative products over polystyrene.

Conclusions

- **Recycling of food-contaminated expanded polystyrene is not currently available in Milpitas.** Food contamination and the material’s low density pose challenges to cost-effective collection, transport, and processing of expanded polystyrene food containers.
- **In cities researched, voluntary reduction programs achieved lower compliance rates than mandatory bans while still requiring an extensive investment in education and outreach.**
- **Reducing the costs of alternatives to be comparable to expanded polystyrene would address a primary barrier to voluntary polystyrene reductions; however the City must consider its ability to provide sufficient financial incentives to achieve cost parity.**

7. Conduct Interviews with Key Stakeholders

As food service polystyrene bans are adopted and implemented, jurisdictions have heard from both vocal critics of and cheerleaders of the bans. This section summarizes the findings from interviews with key stakeholder groups, including both proponents and opponents of a food service polystyrene ban, to better understand their opinions and to identify potential alternative solutions.

Methods

Cascadia worked with the City of Milpitas staff to create a survey to understand food service businesses' concerns over a potential take-out food service expanded polystyrene ban and to identify overall perceptions surrounding the idea of a ban, actions that businesses would be willing to take to reduce expanded polystyrene use, and positive ways that businesses are willing to help the City reach their resource management goals.

On December 9th, 10th, and 15th, 2010, three Cascadia employees visited and spoke with selected food service businesses regarding the take-out containers they currently use and their opinions about the ban as business owners. These businesses included mostly sit-down and fast-food restaurants, but we also spoke with a handful of retail food establishments that primarily sell hot and cold beverages. In total, we completed interviews with 25 food service businesses, representing roughly 3% of the business accounts served by Allied Waste. For each interview, we sought to speak with a manager or owner. We only deviated from the survey form to answer clarifying questions from the interviewees.

Cascadia compiled a list of potential businesses to target from the electronic White Pages (sorting by category). We selected a handful of chain restaurants and fast food establishments (only visiting one location for each chain), as well as a number of restaurants unique to Milpitas. The targeted businesses were primarily located on major roads in Milpitas, including but not limited to: E. Calaveras Boulevard, Jacklin Road, Abel Street, N. Milpitas Boulevard, and S. Park Victoria Dr. If, while on these major roads, a Cascadia outreach person identified a food service business that would likely be affected by a ban but that was not on our list, our outreach personnel also pursued an interview with this business.

Prior to interviewing any food service businesses, Cascadia contacted Carol Kassab, CEO of the Milpitas Chamber of Commerce, to discuss the project goals and solicit any guidance from the Chamber. Ms. Kassab responded that the Chamber cannot distribute information about its members to the public, but that we would be welcome to access information from the Chamber's public website.

To obtain information from other stakeholder groups, Cascadia also interviewed representatives of the following organizations:

- **American Chemistry Council:** Ryan Kenny and Sherry Jackson
- **Save the Bay:** Emily Utter
- **California Restaurant Association:** Johnise Down

Findings

Appendix 7.1. EPS Ban Stakeholders Survey Instrument and Results presents complete survey and interview results. *Appendix 7.2. Text of Interviews with Key Stakeholders* present the text of Cascadia’s interviews with key stakeholders. *Appendix 7.3. Respondent Comments* presents additional comments representatives shared with surveyors after the official survey was complete. *Appendix 7.4. Businesses Interviewed* presents a list of the businesses Cascadia interviewed, business addresses, and business contact names (where applicable).

Businesses

Business Types and Environmental Consciousness

Of the 25 businesses surveyed, 18 were restaurants, 5 were retail food vendors (coffee roasters, yogurt shops), and 2 were delis. Among these businesses, 17 were chain restaurants.

The majority (17) of respondents classified their business as “extremely” or “somewhat” involved with and supportive of environmental issues, and 12 businesses had an environmental corporate policy in place. The majority of business (18) agreed that expanded polystyrene food take out containers littered the environment.

Knowledge of and Support of the Ban

Relatively few respondents (4 businesses) were aware that Milpitas was considering a ban. Over half of respondents (15 businesses) said that the City should ban food service businesses from providing polystyrene containers to customers; 7 of these ban supporters reported currently using polystyrene take-out containers for at least some foods.

The vast majority of respondents (23 businesses) said they would comply with a ban by purchasing alternatives to polystyrene, even if they were more expensive. Many businesses commented that they would have no choice but to buy alternatives if a ban were in place. The amount that businesses reported being willing to increase purchasing costs by varied greatly between “\$100 or less” and “more than \$400.”

Current Practices and Container Usage

About half (13) of restaurants surveyed said they did not currently use expanded polystyrene take-out containers. Chain restaurants reported that making the switch was not financially difficult, as food service containers composed a small part of their overall operating costs. A few non-chain restaurants that did not use expanded polystyrene reported doing so for personal beliefs. These small businesses said they were glad to have made the switch and found that customers were pleased to be offered alternatives to polystyrene; however, they mentioned that the cost of making the shift was difficult to bear.

Of the businesses that use polystyrene take-out containers, the majority estimated that they use more than 2,000 pieces per month of clamshells, soup cups with lids, hot drink cups, cold drink cups, plates, and other products. Among businesses that use alternatives to polystyrene, frequency of use varied widely across material types. Generally paper and recyclable plastic were the most popular materials,

but businesses also reported using biodegradable fiber, biodegradable plastics, and aluminum. Perhaps because of the increased cost of purchasing these materials, businesses did not distribute as many of these alternative containers per month compared to expanded polystyrene.

Outreach

When asked which outreach would be most helpful to them, businesses most commonly said “guides to acceptable alternatives” and “posters and fliers to educate customers about the ban,” followed by “staff training” and “the threat of fines for businesses that didn’t comply.”

Comments from Businesses Outside of the Survey Text

Fourteen businesses shared additional comments with Cascadia surveyors after the surveys were complete. These comments ranged from concerns about alternative containers’ abilities to hold certain foods to excitement that Milpitas is considering the idea of a program to reduce polystyrene use. General themes arose that may guide Milpitas forward in its work with the business community surrounding this issue. First, businesses are concerned that customers will not know about the ban, and will therefore not be part of the polystyrene use reduction efforts or support the measures that businesses take to implement it. Second, businesses did not feel that implementing the change would be a struggle in terms of training staff; instead, they were primarily concerned about the increased purchasing costs that a ban may cause.

American Chemistry Council

Ryan Kenny, representing the American Chemistry Council (ACC), stated that 30 cities in California have banned expanded polystyrene food service take-out containers, and none have shown any significant change in polystyrene use. He said a ban will remove one product and promote the use of another type of disposable product. Mr. Kenny referred to a 2008 San Francisco Streets Re-Audit which he said shows that before and after the ban there was a reduction in polystyrene food service litter, but an increase in other types of food service litter.

Mr. Kenny also said that polystyrene is the least expensive material for restaurants with the highest level of performance. Mr. Kenny stated that many restaurants complained of performance issues in alternative products. For example, he said that Jamba Juice had reported that an alternative cup that they tested leaked.

Mr. Kenny said that mandates for using compostable alternatives without an infrastructure for disposal is ineffective, and these materials still go directly to landfill. Mr. Kenny stated that expanded polystyrene is 100% recyclable and that some cities are accepting polystyrene in their recycling program.

Sherry Jackson stated that some studies have shown no change in litter composition following an expanded polystyrene container ban, although this is not what Mr. Kenny reported for San Francisco. She said that polystyrene bans force consumers to use materials with higher carbon costs, including paper. She stated that a ban would not contribute to zero waste because it would not achieve a reduction in materials.

Mr. Kenny and Ms. Jackson both said that one way to help businesses comply would be for the City to spend more on a general recycling message.

- **American Chemistry Council representatives stated opposition to a ban on polystyrene.** The American Chemistry Council representatives mentioned concerns about the price, performance, and carbon cost of alternatives; the effectiveness of a ban on reducing litter; and the need for composting infrastructure if a compostable alternatives are mandated. In place of a ban, the representatives suggested promoting general recycling and mentioned the recyclability of expanded polystyrene.

Save the Bay

Emily Utter said that Save the Bay has not yet seen any legal challenges to a polystyrene ban based on the California Environmental Quality Act (CEQA), noting that the American Chemistry Council and other similar organizations have instead challenged plastic bag bans by citing a ban's CEQA inadequacies. Ms. Utter said that Save the Bay believes that legislation, partnered with public education needs, is key to reducing polystyrene use among businesses and residents.

Ms. Utter said that a polystyrene recycling program proposed by local haulers does not currently and may never include expanded polystyrene *food service* containers.

Ms. Utter described the value of a strong public education push from the City, which would engage business associations ahead of time, provide businesses with a list of vendors and pricing for alternative products, and include in-person visits to answer questions and information in various languages for ethnically-operated businesses. She said that flyers and posters are not as effective as direct communication with businesses.

According to Ms. Utter, Save the Bay has found that businesses' concerns regarding the price of alternative materials are a significant hurdle. She stated that Milpitas would need to work with businesses to show them the advantages of the alternatives and importance of the ban.

- **A Save the Bay representative stated support for an expanded polystyrene ban paired with in-person outreach** as the most effective method to reduce expanded polystyrene use, in her view. She said that local haulers have not included food service containers in their proposed expanded polystyrene recycling program. The representative recommended that outreach especially address the cost difference between expanded polystyrene and alternative materials.

California Restaurant Association

Johnise Down of the California Restaurant Association said that the cost difference between expanded polystyrene and alternative materials can be significant, especially for smaller restaurants with high overhead and low profit margins.

Ms. Down mentioned that some studies have shown the lack of a proven impact or benefit in cities with polystyrene bans and that most restaurants that can afford to make the change have already done so.

She said that the California Restaurant Association questions the performance of alternative materials and would support alternatives that are inexpensive and work for the business.

According to Ms. Downs, the California Restaurant Association recommends that the City ensures that an adequate supply of alternatives is locally available, ensures the City has infrastructure for composting, and offers some type of co-op to purchase in bulk at a lower cost. Ms. Down also stated that outreach challenges include the difficulty of reaching decision-makers at restaurants, that small restaurant staff may not be as web-savvy, and communication difficulties with restaurant staff that speak languages other than English.

Ms. Downs requested that Milpitas keep both the California Restaurant Association and individual restaurants involved and informed in the process of deciding how to reduce expanded polystyrene use.

- **A California Restaurant Association representative expressed concerns about a ban and suggested that Milpitas proceed cautiously if it pursues this course.** She expressed concerns about the lack of demonstrated benefits in other cities with bans, the performance of alternative materials, and the cost impacts (particularly on small restaurants). If the City were to enact a ban, the representative suggested that the City offer a way for small businesses to purchase alternatives locally and in bulk to lower costs, composting for compostable alternatives, and outreach that overcomes the challenges of reaching small restaurants.

Conclusion

- **Over half (15 out of 25) businesses interviewed supported a City ban on expanded polystyrene.**
- **Business owners said that educating Milpitas residents about the ban would be important so that they continue to support local establishments.**
- **Stakeholders interviewed who expressed concerns about a ban mentioned the cost and performance of alternatives, net environmental effects, and the need for composting infrastructure if compostable alternatives are mandated.**
- **Stakeholders opposed to a ban suggested promoting a general recycling message and recycling expanded polystyrene. Ban proponents said that local haulers have not included food service containers in their proposed recycling program for expanded polystyrene.**
- **Representatives from two stakeholder groups recommended implementing strong outreach and education efforts if the City decided to ban expanded polystyrene.**

8. Survey Milpitas Residents

Residential support is often cited as key to ensuring the success of an expanded polystyrene ban. This section summarizes the results of a survey of Milpitas residents to assess their opinions regarding an expanded polystyrene ban.

Methods

Cascadia worked with the City of Milpitas staff to create a survey to assess residents' concerns over a potential polystyrene ban, overall feelings on the idea of a ban, and positive ways that residents would be willing to help the City reach its resource management goals. This survey included questions about a, expanded polystyrene ban and about a plastic bag ban. Cascadia asked residents additional questions regarding Household Dump Days and demographics, providing information to the City for a separate project. The final survey instrument and complete results are attached in *Appendix 8.1. Residential Survey Instrument and Results*. Additional details on the methodology are presented in *Appendix 8.2. Residential Survey Methods: Continued*. In total, 293 residents were surveyed, representing approximately 4 percent of the population. This number of surveys produces a margin of error of plus or minus 5 percent at the 90 percent confidence level.

Findings

When asked about the effect of single-use bags and polystyrene food service take-out containers, about 75 percent of respondents agreed with the statement that these products can harm wildlife, and 73 percent of respondents agreed with a statement that these products litter the environment.

Approximately 69 percent of residents surveyed did not know that the City was considering a ban on expanded polystyrene food service take-out containers. When asked about their support or opposition for bans on polystyrene food service take-out containers and single use bags, 48 percent of respondents approved of a ban of **both products**, 22 percent approved of a **polystyrene** ban only, 6 percent approved of a **single-use bag** ban only, and 24 percent **disapproved** of any ban.

Surveyors asked residents if they had visited a fast-food restaurant that did not use expanded polystyrene packaging and noticed any loss of quality in their food as a result of the packaging. About 86 percent of respondents said that they had eaten food from to-go containers not made of expanded polystyrene without noticing a difference in food quality.

Respondents varied on whether they would continue to support a business that had to increase prices to cover costs of complying with an expanded polystyrene take-out container ban. Half (50%) of respondents said they would support the businesses, 27 percent said they may consider supporting the business, and 23 percent said they would not support the business.

Residents were asked what their hypothetical response would be to a business that had not yet complied with a ban after it came into effect. While a third (33%) of respondents said they would shop there as usual because non-compliance would not affect their shopping habits, a majority of respondents said they would take some action in response to non-compliance. A third of respondents

(34) said they would mention it to the business and ask them to comply with the ban, and about 15 percent of residents surveyed reported that they would not say anything to a non-compliant business but would avoid shopping at the store. About 7 percent of respondents said they would report the business to the City for investigation, and 5 percent said they would tell the business that they would stop shopping at the business if it did not comply.

At the end of the survey, residents were asked if they would like to provide additional input. Responses from the 93 residents that did so are provided in *Appendix 8.3. Additional Responses from Residents*. (Because the residential survey covers both the polystyrene ban and a single-use bag ban, some responses refer to a single use bag ban.)

Conclusions

- **About 70% of residents surveyed said they would approve of a ban on polystyrene food service take-out containers.**
- **Half (50%) of Milpitas residents surveyed stated they would continue to support a business that had to increase their prices to cover costs of complying with a polystyrene take-out container ban, while nearly a quarter (23%) said they would not support such a business.**
- **A majority of respondents reported that they would take some action if they saw non-compliant businesses, such as mentioning the ban to the non-compliant business (34%), stopping shopping at the businesses (15%), or reporting the business to the City (7%).**
- **About a third (33%) of respondents reported that non-compliance would not affect their shopping habits.**

9. Develop an Outreach and Awareness Campaign Plan

An outreach and awareness campaign would help the City of Milpitas move forward with any program selected to manage polystyrene. This section summarizes findings from a review of polystyrene outreach programs in other jurisdictions and suggestions for outreach targeting both residents and businesses.

Methods

Cascadia reviewed outreach materials and programs that other cities have successfully used to reduce polystyrene use among food service businesses in their communities. These cities included Palo Alto, Santa Cruz, and San Jose in California. Cascadia also provided insight based on outreach that our staff has performed in Issaquah and Seattle, Washington.

Findings

The findings begin with a summary of lessons learned from outreach programs used by other cities with a polystyrene ban followed by a description of outreach approaches the City of Milpitas could use.

Lessons Learned

Lessons learned from successful outreach programs for businesses in cities elsewhere include the following:

- **Involve the community in a series of stakeholder meetings early in the process and maintain a transparent process throughout.** Key stakeholder groups include advocacy groups, environmental organizations, chambers of commerce, neighborhood associations, and other business and industry organizations.
- **While active outreach is very effective, the most important tactic is to spread clear and consistent messages to both businesses and residents.**
- **Make outreach opportunities as attractive and useful to businesses as possible** by providing outreach materials in a variety of languages and to applicable to a variety of business types.
- **Make information about the ban and compliance requirements available on the city’s website and through an e-mail list-serve** to update businesses and residents on the progress and timeline of a ban.
- **Emphasize compliance through education, awareness, and “doing the right thing” instead of focusing on enforcement.**
- **Investing in educating residents can increase pressure to comply:** residents who understand why the ban is in place are more likely to remind businesses they frequent to comply.

A variety of outreach strategies are available to implement a ban on expanded polystyrene. Outreach plans should target restaurant owners, managers, and employees at the primary businesses affected by a take-out food service polystyrene ban. The focus of all outreach and action plans should be to communicate behavior change and education.

Outreach Options for Milpitas

Milpitas could undertake two types of outreach either separately or combined: one focusing on providing written information and one adding active outreach and education.

Provide Written Information to Businesses and Residents

This outreach model involves limited staff time and instead relies on print and media to saturate the community with information about a polystyrene ban. It is a less expensive and more hands-off approach to education, compared to personalized assistance. Outreach materials should be made available online (on the City's website and in a listserv) and in print, when necessary. This approach can focus on businesses, residents, or both together:

- **Business Focus**

- The City would distribute certified-letter mailings to affected businesses. We suggest that the City send at least two communications: one as soon as the ban is adopted (before implementation) and a second one month prior to the implementation date. If there will be a significant grace period between implementation and enforcement, then a third letter should be sent one month before enforcement begins.
 - Mailings should have a clear and simple message and should provide adequate information about the ban, how it affects the targeted businesses, required actions, and where to get more information such as translated materials.
 - If possible, these mailings should offer a list of vendors that can provide alternatives to polystyrene packaging to businesses.

- **Resident/Consumer Focus**

- The City would distribute direct mailings to residents about the ban process and associated programs. Engaging the public will ultimately help to ease the burden of local enforcement agencies. For example, asking residents to notify the City if businesses are not in compliance will reduce the administrative cost of having enforcement officers search for non-compliant businesses.

- **Combination of Business and Resident**

- This approach consists of direct mailings to both businesses and residents.
- A combination outreach plan would be more costly to the City because it targets both audiences; however, an investment in this approach may be more effective as it reaches all affected parties.

Conduct Active Outreach to Businesses

The active outreach approach is usually more expensive and also more effective than providing only written information. When outreach personnel deliver materials and information in person, businesses

have the opportunity to ask questions, clarify misunderstandings, and feel supported by the City as they pursue alternative solutions. Typically, city employees in the public works or environmental services departments or outside consultants perform this direct type of outreach to food services businesses. However, a less expensive alternative would be for the City to train a group of volunteers to represent Milpitas. Key elements of active outreach are:

- **An initial “one-touch” approach to businesses in which staff or volunteers visit every food service business** in the City to deliver information about the ban prior to the date of implementation. The cities of Issaquah, Washington, and Palo Alto, California, have successfully used this approach.
- **Follow-up visits and on-site technical assistance after implementation of the ban** for food service businesses that either request a site visit or are reported to be using banned products. In these second outreach visits, the City should provide a translator if necessary to ensure that the outreach visit is effective. This outreach strategy has been employed in Seattle and Santa Cruz, yielding positive results.

On-site outreach is most effective when provided during non-peak restaurant hours. For fast food and lunch-time restaurants, the hours following the lunch rush and before closing are best (1:30–4:00 PM). It is best to approach restaurants that are open only for dinner before service starts (2:30–5:00 PM).

Conclusions

- **Should Milpitas choose to pursue a ban, the City should involve stakeholder early in the process, maintain transparency, use clear and consistent messages, provide information electronically, conduct outreach in a variety of languages, and emphasize education over enforcement.**
- **Although more expensive, an active outreach approach is usually also more effective than providing only written information.** Similarly, providing informational materials to all affected parties is more effective than targeting only businesses or only consumers.