

COMMITTEE MEMBERS
Laura M. Hoffmeister, Chair
Edi E. Birsan, Committee Member

Civic Center
1950 Parkside Drive
Concord, CA 94519
www.cityofconcord.org



**Special Meeting of the
Policy Development &
Internal Operations
Committee**

Wednesday,
October 4, 2017

6:00 p.m.

Garden Conference
Room, Wing A
1950 Parkside Drive

AGENDIZED ITEMS – The public is entitled to address the Committee on items appearing on the agenda before or during the Committee’s consideration of that item. Each speaker will be limited to approximately three minutes.

1. **ROLL CALL**
2. **PUBLIC COMMENT PERIOD**
3. **REPORTS**
 - a. **Considering** – enacting a ban on polystyrene. **Report by Jessica Gonzalez, Assistant Planner.**
4. **ADJOURNMENT**

ADA NOTICE AND HEARING IMPAIRED PROVISIONS

In accordance with the Americans with Disabilities Act and California Law, it is the policy of the City of Concord to offer its public programs, services and meetings in a manner that is readily accessible to everyone, including those with disabilities. If you are disabled and require a copy of a public hearing notice, or an agenda and/or agenda packet in an appropriate alternative format; or if you require other accommodation, please contact the ADA Coordinator at (925) 671-3031, at least five days in advance of the hearing. Advance notification within this guideline will enable the City to make reasonable arrangements to ensure accessibility.

Distribution: City Council
Valerie Barone, City Manager
Susanne Brown, City Attorney
Kathleen Tropa, Assistant City Manager
Joelle Fockler, City Clerk

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Staff Report

Date: October 4, 2017

To: Council Committee on Policy Development & Internal Operations

From: Valerie J. Barone, City Manager

Reviewed by: Andrea Ouse, Community & Economic Development Director
 Laura Simpson, Planning and Housing Manager
 Michael Cass, Principal Planner: Long-Range & Sustainability Policy

Prepared by: Jessica Gonzalez, Assistant Planner
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Subject: **Consideration to Enact a Ban on Polystyrene**

Report in Brief

On July 13, 2013, the City Council adopted the Citywide Climate Action Plan (“CAP”). The CAP serves as a community document that provides guidance for measuring and monitoring greenhouse gases, while directing policies on how to reduce greenhouse gas emissions. The Plan includes strategies and requirements to reduce energy consumption and increase waste diversion. In anticipation of the State’s 2020 requirement to divert 75 percent of the solid waste generated by businesses and multi-family developments from the landfill, the CAP implementation strategies focus on reducing waste generation and increasing diversion of solid waste from the landfill to a minimum of 75 percent.

On July 11, 2017, Council Member Obringer requested staff research the feasibility of enacting a polystyrene ban as part of the City’s diversion efforts. The Council referred the matter to the Council Committee on Policy Development & Internal Operations (“PD&IO”) for consideration.

Recommended Action

Provide staff direction on whether or not to proceed with developing a polystyrene ban.

Background

Polystyrene, commonly referred to by its trade name as “Styrofoam”, is a petroleum-based plastic derived from a styrene monomer. Styrene is a chemical used to

manufacture automobile parts, plastics, and rubber. Because polystyrene is a lightweight material with insulation properties, it is commonly used to manufacture a variety of single-use disposable products, such as cups, takeout containers, and other foodware (Attachment 1). In 2011, the U.S Department of Health and Human Services added styrene to their list of anticipated human carcinogens. Because styrene can leach into food and drinks, several jurisdictions have cited potential health concerns as reasons for implementing a ban (Attachment 2). According to a report by the National Toxicology Program, coordinated by the U.S Department of Health and Human Services, styrene caused lung tumors in several strains of mice and is considered a lab animal carcinogen (Attachment 3).

Aside from health concerns, Clean Water Action California (“CWAC”) lists environmental concerns over polystyrene containers ending up in storm drains and landfills because of the potential for leaching toxins into the water. The CWAC also notes that unlike most plastics, the lightweight properties of polystyrene allow it to easily move through streets and storm drains into the ocean. Polystyrene is also noted as easily breaking down into smaller pieces in a process referred to as photodegrade, which in combination with its mobility make it roughly one of the second most abundant beach debris. Because of its physical and chemical properties, polystyrene poses a threat to birds when accidentally ingested and marine life when the material ends up in waterways (Attachment 4).

The Contra Costa County Climate Leaders (4CL) is a non-profit organization that assists and supports the County and cities within Contra Costa in reducing greenhouse gas emissions. The organization created a polystyrene fact sheet (Attachment 5) in an effort to provide information for jurisdictions considering a ban. The factsheet notes that polystyrene can take up to 500 years to decompose and no widespread recycling scheme for polystyrene has been established. As such, polystyrene was noted as taking up to 25 percent of the world’s landfills.

Since 2008, there have been a variety of legislative attempts to ban the use of polystyrene that have not passed. On February 17, 2017, the State legislature introduced SB705 (Allen) and AB1594 (Bloom), aimed to phase out the use of non-recyclable and non-compostable polystyrene food packaging, reduce waste, and reduce plastic pollution. SB705 would have prohibited specific food vendors, such as restaurants, from dispensing prepared food in a polystyrene food container on or after January 1, 2018; however the bill is currently inactive (Attachment 6). AB1594 would direct the Ocean Protection Council to implement strategies to reduce ocean plastic pollution, with polystyrene named as one of the largest sources. As of the date of this report, the State referred AB1594 to the Committee on Environmental Quality. However, in the absence of any state-wide ban, individual cities can enact local bans. On July 11, 2017, Council Member Obringer requested staff research the feasibility of enacting a polystyrene ban.

Analysis

Although there is no current State-wide legislation banning polystyrene, many jurisdictions have banned or limited the use of polystyrene locally. According to a map with effective bans in California created by Save the Bay, Berkeley was one of the earliest Bay Area cities to prohibit restaurant use of polystyrene in 1990. Since that time, almost over 100 California cities have adopted similar ordinances banning the use of polystyrene, mostly in restaurant settings for single-use take-out containers. Seven cities in Contra Costa County have enacted a polystyrene ban, including El Cerrito, Hercules, Lafayette, Martinez, Pittsburg, Richmond, and Walnut Creek. Four of the cities that enacted a ban share a boundary with the City of Concord (Attachment 7). Through their research, Save the Bay calculated that 62 percent of the Bay Area population is living in a place that has banned polystyrene foodware. Attachment 8 provides additional information regarding existing bans in the County.

On July 13, 2013, the City Council adopted the Citywide CAP, which serves as a community document that provides guidance for measuring and monitoring greenhouse gases, while directing policies on how to reduce greenhouse gas emissions. The CAP includes strategies and requirements to reduce energy, water, and waste. CAP Implementation Action BW1 includes a strategy to expand waste reduction programs. In anticipation of the State's 2020 required 75 percent diversion of solid waste for businesses and multi-family waste, the implementation action is to reduce waste and divert a minimum of 75 percent of solid waste from the landfill.

In implementing a polystyrene ban, several jurisdictions include a phased-in minimum percentage of take-out packaging to be recyclable or returnable. For instance, after one year of implementation, the City of Lafayette required restaurants to use 50 percent of recyclable or returnable food packaging, and use 75 percent by 2020. A ban with a similar phase out to recyclable or returnable food packaging system in Concord may help reduce waste, and would be consistent with the City's Climate Action Plan, while limiting the financial impact on local businesses by allowing them to deplete their existing packaging inventory over time.

According to Save the Bay, polystyrene food containers are a major component of urban litter, and are the largest contributor to clogged municipal storm drains, as such there is a potential to earn certain storm water program management credits through a polystyrene ban. Based on an evaluation by the City's Engineering Division, the City met its 2017 goal for the trash generation reduction mandate. Earning credits through enforcement of a ban may help the City towards meeting future goals, as the requirements will become more stringent in the future and compliance will become more challenging. However, there is no guarantee that the credit will be available for future reporting cycles. Generally, if the City is not in compliance with storm water management mandates, then the City may be required to implement prescribed stormwater infrastructure improvements and/or face financial penalties.

Potential Goals of a Polystyrene Ban

Banning polystyrene provides a number of positive outcomes for a community, such as:

- Reduce waste by requiring and/or promoting recyclable and returnable alternatives;
- Retain local control, rather than relying on potential State-wide regulations,
- Obtain “Trash Reduction - Source Control” credits of up to 6 percent on Annual Stormwater Report;
- Further Implement the objectives of the City’s adopted CAP;
- Reduce human health risks associated with styrene; and,
- Increase regional consistency by customizing regulations to align regulations with the four surrounding jurisdictions that currently have a ban in place.

Potential Polystyrene Ban Considerations

While there are many potential goals that can be met through enacting a ban, there are also are potential ramifications that the City should consider. Ramifications may include:

- Bans are often perceived as not business friendly;
- Cause confusion for chain business owners who have businesses in Concord and other jurisdictions without a ban;
- Impact limited staff resources to develop the ban, conduct public outreach, and enforce the ban;
- Create financial hardship for small businesses; and,
- Potential increase in consumer costs at food-serving businesses.

Types of Polystyrene Bans

After analyzing several different approaches to banning polystyrene, staff would recommend a phased approach, which would give retailers time to comply with the ban and/or time to incorporate recyclable and returnable foodware. Some jurisdictions, such as Richmond, have applied the ban to retail items such as coolers, packaging peanuts, and other packaging materials in addition to restaurants and/or food containers. Staff recommends against extending the ban to items other than to-go food containers at this time because of the complexity of different retail operations and materials used. Additionally many of the legislative attempts to ban the use of styrene have been limited to restaurants and food containers only. Staff also recommends against implementing an immediate ban, to allow food vendors time to use and deplete existing inventory.

Other Policy Issues

If PD&IO supports the establishment of a polystyrene ban, the following issues will also require policy direction and further research:

- Specify when a ban should be established;
- Establish parameters of the products and businesses included in the ban;
- Specify if the ban should include a phased approach;
- Determine business exemptions from the ban, such as non-profits, schools, and religious institutions; and
- Develop procedure for enforcement / monitoring and designate an oversight department.

Timeframe

If directed by PD&IO, staff would prepare draft regulations based upon policy direction provided at a subsequent meeting, followed by consideration by the entire Council. Staff anticipates the review process to develop regulations with input by PD&IO and City Council would take approximately four months. Additionally, the new regulations may be subject to the California Environmental Quality Act, which would add additional time, depending upon the level and complexity of review. After regulations are adopted, if applicable, staff would spend a minimum of six months educating the public about the new regulations.

Financial Impact

The City's fiscal impact of a polystyrene ban will be limited to expenditures of staff time associated with developing and disseminating public information and providing guidance, as well as activities related to enforcement. Penalties may be levied on non-compliant establishments to cover costs of enforcement and to reduce potential impacts on the City's General Fund.

Environmental Determination

An environmental determination will be made at the time that a ban is prepared for committee and / or council consideration, as appropriate. Staff anticipates that the project will either qualify for a Categorical Exemption or will not be considered a "project" for CEQA purposes.

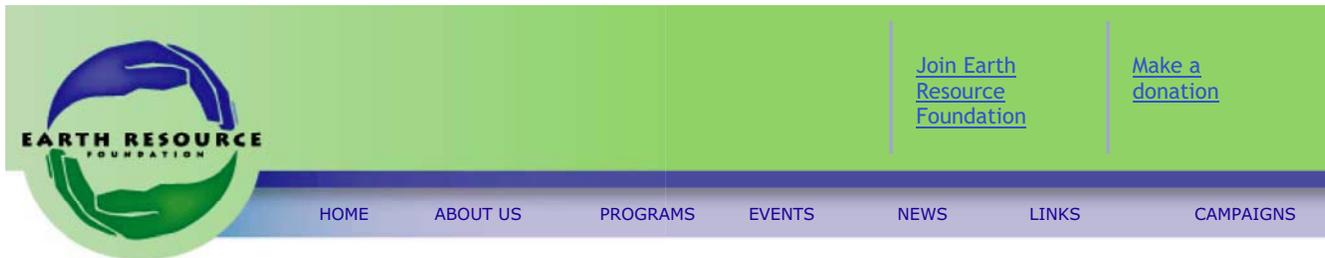
Public Contact

The PD&IO Agenda was posted. Additionally, staff notified the Greater Concord Chamber of Commerce, the Todos Santos Business Association, Contra Costa County Climate Leaders, and Monument Impact.

Attachments

1. Earth Source, Polystyrene Foam Report
2. National Institute of Environmental Health Sciences, dated June 10, 2012
3. Report by the National Toxicology Program, coordinated by the U.S Department of Health and Human Services
4. Clean Water Action California, Facts about Styrofoam
5. Contra Costa Climate Leaders (4CL), Polystyrene Ordinance Fact Sheet

6. Assembly Bill 1594
7. Save the Bay, Bay Area Bag and Styrofoam Bans Maps and Factsheet
8. Polystyrene Ban Table Comparing Contra Costa County Jurisdictions
9. Public Comments



[CAPP Overview](#) | [CAPP Goals](#) | [Sea Turtles Don't Shop](#) | [Background Info](#) | [Cleanup Costs](#) | [Styrofoam](#) | [Useful Links](#)



[The Circle](#)
ERF's newsletter

Polystyrene Foam Report

What is it?

Polystyrene is a petroleum-based plastic made from the styrene monomer. Most people know it under the name Styrofoam, which is actually the trade name of a polystyrene foam product used for housing insulation. Polystyrene is a light-weight material, about 95% air, with very good insulation properties and is used in all types of products from cups that keep your beverages hot or cold to packaging material that keep your computers safe during shipping.

Why not use it?

- The biggest environmental health concern associated with polystyrene is the danger associated with Styrene, the basic building block of polystyrene. Styrene is used extensively in the manufacture of plastics, rubber, and resins. About 90,000 workers, including those who make boats, tubs and showers, are potentially exposed to styrene. Acute health effects are generally irritation of the skin, eyes, and upper respiratory tract, and gastrointestinal effects. Chronic exposure affects the central nervous system showing symptoms such as depression, headache, fatigue, and weakness, and can cause minor effects on kidney function and blood. Styrene is classified as a possible human carcinogen by the EPA and by the International Agency for Research on Cancer (IARC). A voluntary compliance program has been adopted by industries using styrene. The US Department of Labor, Occupational Safety & Health Administration unsuccessfully (a federal court overturned the ruling in 1992) tried to limit the amount of worker exposure to styrene to 50 parts per million (ppm). According to the Styrene Information and Research Center (SIRC), they still encourage their member companies to comply with the 50 ppm exposure limit. This program would reduce styrene exposures to a 50 ppm TWA with a 100 ppm (15 minute) ceiling.
-OSHA (US Dept of Labor, Occupational Safety & Health Administration)
- A 1986 EPA report on solid waste named the polystyrene manufacturing process as the 5th largest creator of hazardous waste. The National Bureau of Standards Center for Fire Research identified 57 chemical byproducts released during the combustion of polystyrene foam. The process of making polystyrene pollutes the air and creates large amounts of liquid and solid waste.
- Toxic chemicals leach out of these products into the food that they contain (especially when heated in a microwave). These chemicals threaten human health and reproductive systems.
- These products are made with petroleum, a non-sustainable and heavily polluting resource.
- The use of hydrocarbons in polystyrene foam manufacture releases the hydrocarbons into the air at ground level; there, combined with nitrogen oxides in the presence of sunlight, they form tropospheric ozone -- a serious air pollutant at ground level. According to the EPA (U.S. Environmental Protection Agency) more than 100 million Americans currently live in areas that fail to meet air quality standards for ozone. California, the Texas Gulf Coast, the Chicago-Milwaukee area, and the Northeastern U.S. all have "serious ozone air quality problems," according to EPA. Ozone is definitely a dangerous pollutant. The EPA says: "Healthy individuals who are exercising while ozone levels are at or only slightly above the standard can experience reduced functioning of the lungs, leading to chest pain, coughing, wheezing, and pulmonary congestion. In animal studies, long-term exposure to high levels of ozone has produced permanent structural damage to animal lungs while both short and long term exposure has been found to decrease the animal's capability to fight infection." In other words, prolonged exposure to atmospheric ozone above legal limits might be expected to damage the immune system.

I AM THE PROBLEM
I AM THE SOLUTION

PRACTICAL THINGS YOU CAN DO TO BE ECO-FRIENDLY:

dispose of it properly.

Wash your car at a do-it-yourself car wash.

Pick up the trash in your gutters (it goes directly to the ocean).

Get involved in your local government

Buy nontoxic cleaners.

Fix all car leaks.

Properly store all toxic products and go to toxic

- By volume, the amount of space used up in landfills by all plastics is between 25 and 30 percent. -"Polystyrene Fact Sheet," Foundation for Advancements in Science and Education, Los Angeles, California.
- Polystyrene foam is often dumped into the environment as litter. This material is notorious for breaking up into pieces that choke animals and clog their digestive systems.
- Many cities and counties have outlawed polystyrene foam (i.e. Taiwan, Portland, OR, and Orange County, CA).

Can polystyrene be recycled?

- While the technology for recycling polystyrene is available, the market for recycling is very small and shrinking. Many Americans are hearing from their curbside recycling agencies that they will not accept PS goods. The good news is that the current Biopolymer revolution (biodegradable polymers) is charting a path for producing environmentally friendly packaging material to replace those peanuts. Corn based and other seeds known collectively as soapstock waste lead the way. Some are already available as replacements. Perhaps the problematic recycling situation will be solved by replacing the product.
- Polystyrene recycling is not "closed loop" - collected polystyrene cups are not remanufactured into cups, but into other products, such as packing filler and cafeteria trays. This means that more resources will have to be used, and more pollution created, to produce more polystyrene cups.
-*"Plastics Industry Grasps for Straws," Everyone's Backyard, January/February 1990, Citizen's Clearinghouse for Hazardous Waste, p. 6.*

Does polystyrene deplete the ozone layer?

- Initially a portion of polystyrene production was aided by the use of chlorofluorocarbons (CFCs), the chemicals that break down ozone in the troposphere. When this issue came to light, polystyrene manufacturers negotiated a gradual phase-out of CFCs in the production process and no CFCs have been used since the late 1980's.
- Though polystyrene manufacturers claim that their products are "ozone-friendly" or free of CFCs, this is only partially true. Some polystyrene is now manufactured with HCFC-22, which, though less destructive than its chemical cousins, CFC-11 and CFC-12, is still a greenhouse gas and harmful to the ozone layer. In fact, according to a 1992 study by the Institute for Energy and Environmental Research, HCFCs are three to five times more destructive to the ozone layer than previously believed.
-*"Study Finds CFC Alternatives More Damaging Than Believed," The Washington Post, December 10, 1989.*

Why Use Alternatives?

- Post-consumer recycled paper, bamboo, corn plastics, etc. are easily renewable resources.
- All of these products biodegrade when composted.
- Paper products can be recycled at most people's doorstep where community recycling is in place.
- In 1995, 40% of all US paper was recycled, including 32.6 million tons of paper & paperboard. (EPA)
- Every ton of 100% Post-consumer waste recycled paper products you buy saves:
 - 12 trees
 - 1,087 pounds of solid waste
 - 1,560 kilowatts of energy (2 months of electric power required by the average US home)
 - 1,196 gallons of water
 - 1,976 lbs. of greenhouse gases (1,600 miles traveled in the average US car)
 - 3 cubic yards of landfill space
 - 9 pounds of HAPs, VOCs, and AOXs combined
 - 390 gallons of oil



-Report from Green Restaurant Association Creating an Environmentally Sustainable Restaurant Industry

"In the end, we will conserve only what we love. We only love what we understand. We only understand what we are taught."

-Babia Dioum Senegalese Ecologist

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info@earthresource.org

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News Release

Archive - New Contact Information

For more information about this archival news release, please contact [Christine Flowers](mailto:bruskec@niehs.nih.gov) (<mailto:bruskec@niehs.nih.gov>), Director, [Office of Communications & Public Liaison](https://www.niehs.nih.gov/about/od/ocpl/index.cfm) (<https://www.niehs.nih.gov/about/od/ocpl/index.cfm>) at (919) 541-3665.

FOR IMMEDIATE RELEASE
Friday, June 10, 2011, 12:00 a.m. EDT

Contact: [Robin Mackar](mailto:rmackar@niehs.nih.gov) (<mailto:rmackar@niehs.nih.gov>)
, NIEHS
(919) 541-0073

News Releases

New Substances Added to HHS Report on Carcinogens

The U.S. Department of Health and Human Services today added eight substances to its Report on Carcinogens, a science-based document that identifies chemicals and biological agents that may put people at increased risk for cancer.

The industrial chemical formaldehyde and a botanical known as aristolochic acids are listed as known human carcinogens. Six other substances - captafol, cobalt-tungsten carbide (in powder or hard metal form), certain inhalable glass wool fibers, o-nitrotoluene, riddelliine, and styrene - are added as substances that are reasonably anticipated to be human carcinogens. With these additions, the 12th Report on Carcinogens now includes 240 listings. It is available at [12th Report on Carcinogens \(RoC\)](https://ntp.niehs.nih.gov/go/roc12) [↗](https://ntp.niehs.nih.gov/go/roc12) (<https://ntp.niehs.nih.gov/go/roc12>) .

"Reducing exposure to cancer-causing agents is something we all want, and the Report on Carcinogens provides important information on substances that pose a cancer risk," said Linda Birnbaum, Ph.D., director of both the National Institute of Environmental Health Sciences (NIEHS) and the National Toxicology Program (NTP). "The NTP is pleased to be able to compile this report."

John Bucher, Ph.D., associate director of the NTP added, "This report underscores the critical connection between our nation's health and what's in our environment."

The Report on Carcinogens is a congressionally mandated document that is prepared for the HHS Secretary by the NTP. The report identifies agents, substances, mixtures, or exposures in two categories: known to be a human carcinogen and reasonably anticipated to be a human carcinogen. A listing in the Report on Carcinogens
Page 10 of 34

does not by itself mean that a substance will cause cancer. Many factors, including the amount and duration of exposure, and an individual's susceptibility to a substance, affect whether a person will develop cancer.

Once a substance is nominated by the public or private sector and selected for consideration, it undergoes an extensive evaluation with numerous opportunities for scientific and public input. There were at least six opportunities for public input on each substance. The NTP used established criteria to evaluate the scientific evidence on each candidate substance under review. The NTP drew upon the scientific expertise of several federal agencies, including the National Institutes of Health, Centers for Disease Control and Prevention, Agency for Toxic Substances and Disease Registry, U.S. Food and Drug Administration, U.S. Environmental Protection Agency, U.S. Consumer Product Safety Commission, and Occupational Safety and Health Administration.

"The strength of this report lies in the rigorous scientific review process," said Ruth Lunn, Dr.P.H., director of the NTP Office of the Report on Carcinogens. "We could not have completed this report without the significant input we received from the public, industry, academia, and other government agencies."

A detailed description of each substance listed in the Report on Carcinogens is included in the new report.

Two known human carcinogens:

Aristolochic acids have been shown to cause high rates of bladder or upper urinary tract cancer among individuals with kidney or renal disease who consumed botanical products containing aristolochic acids. Aristolochic acids are a family of acids that occur naturally in some plant species. Despite a warning issued in 2001 by the U.S. Food and Drug Administration that advised consumers to discontinue use of any botanical products containing aristolochic acids, they can still be purchased on the Internet and abroad, and may be found as a contaminant in herbal products used to treat a variety of symptoms and diseases, such as arthritis, gout, and inflammation.

Formaldehyde was first listed in the 2nd Report on Carcinogens as a substance that was reasonably anticipated to be a human carcinogen, after laboratory studies showed it caused nasal cancer in rats. There is now sufficient evidence from studies in humans to show that individuals with higher measures of exposure to formaldehyde are at increased risk for certain types of rare cancers, including nasopharyngeal (the nasopharynx is the upper part of the throat behind the nose), sinonasal, as well as a specific cancer of the white blood cells known as myeloid leukemia. Formaldehyde is a colorless, flammable, strong-smelling chemical that is widely used to make resins for household items, such as composite wood products, paper product coatings, plastics, synthetic fibers, and textile finishes. Formaldehyde is also commonly used as a preservative in medical laboratories, mortuaries, and some consumer products, including some hair straightening products.

Six substances reasonably anticipated to be human carcinogens:

Captafol was found to induce cancer in experimental animal studies, which demonstrated that dietary exposure to captafol caused tumors at several different tissue sites in rats and mice. Captafol is a fungicide that had been used to control fungal diseases in fruits, vegetables, ornamental plants, and grasses, and as a seed treatment. It has been banned in the United States since 1999, but past exposures may still have an effect on health.

Cobalt-tungsten carbide (in powder and hard metal form) showed limited evidence of lung cancer in workers involved in cobalt-tungsten carbide hard metal manufacturing. Cobalt-tungsten carbide is used to make cutting and grinding tools, dies, and wear-resistant products for a broad spectrum of industries, including oil and gas drilling, as well as mining. In the United States, cobalt-tungsten hard metals are commonly referred to as cemented or sintered carbides.

Certain inhalable glass wool fibers made the list based on experimental animal studies. Not all glass wool or man-made fibers were found to be carcinogenic. The specific glass wool fibers referred to in this report have been redefined from previous reports on carcinogens to include only those fibers that can enter the respiratory tract, are highly durable, and are biopersistent, meaning they remain in the lungs for long periods of time. Glass wool fibers generally fall into two categories for consumers: low-cost, general purpose fibers, and premium, special purpose fibers. The largest use of general purpose glass wool is for home and building insulation, which appears to be less durable and less biopersistent, and thus less likely to cause cancer in humans.

o-Nitrotoluene is listed because experimental animal studies showed tumor formation at many different tissue sites in rats and mice. o-Nitrotoluene is used as an intermediate in the preparation of azo dyes and other dyes, including magenta and various sulfur dyes for cotton, wool, silk, leather, and paper. It is also used in preparing agricultural chemicals, rubber chemicals, pesticides, petrochemicals, pharmaceuticals, and explosives. Workers in the United States are likely exposed to o-nitrotoluene through the skin or from breathing it during production and use. o-Nitrotoluene has also been detected in air and water near facilities that produce munitions, and near military training facilities.

Riddelliine has been found to cause cancer of the blood vessels in rats and mice, leukemia and liver cancer in rats, and lung tumors in mice. This botanical should not be confused with the drug Ritalin, prescribed for the treatment of attention deficit hyperactivity disorder. Riddelliine is found in certain plants of the genus *Senecio*, a member of the daisy family, grown in sandy areas in the western United States and other parts of the world. Some common names for *Senecio* plants are ragwort and groundsel. Riddelliine-containing plants are not used for food in the United States, and have no known commercial uses. However, at least 13 *Senecio* species have been identified that are used in herbal medicines or possibly as food in other parts of the world. Exposure in humans could result from eating or drinking herbal medicine or teas, honey, or foods contaminated by parts of *Senecio* plants or after consuming products from animals that have fed on the plants.

Styrene is on the list based on human cancer studies, laboratory animal studies, and mechanistic scientific information. The limited evidence of cancer from studies in humans shows lymphohematopoietic cancer and genetic damage in the white blood cells, or lymphocytes, of workers exposed to styrene. Styrene is a synthetic chemical used worldwide in the manufacture of products such as rubber, plastic, insulation, fiberglass, pipes, automobile parts, food containers, and carpet backing. People may be exposed to styrene by breathing indoor air that has styrene vapors from building materials, tobacco smoke, and other products. The greatest exposure to styrene in the general population is through cigarette smoking. Workers in certain occupations may potentially be exposed to much higher levels of styrene than the general population.

The Report on Carcinogens, Twelfth Edition, is prepared by the National Toxicology Program, an interagency program headquartered at the National Institute of Environmental Health Sciences, part of the National Institutes of Health.

The NTP was established in 1978. The program was created as a cooperative effort to coordinate toxicology testing programs within the federal government, strengthen the science base in toxicology, develop and validate improved testing methods, and provide information about potentially toxic chemicals to health, regulatory, and research agencies, scientific and medical communities, and the public. The NTP is headquartered at the NIEHS. For more information about the NTP, visit <http://ntp.niehs.nih.gov>.

NIEHS supports research to understand the effects of the environment on human health and is part of NIH. For more information on environmental health topics, visit our Web site at <http://www.niehs.nih.gov>. Subscribe to one or more of the NIEHS news lists to stay current on NIEHS news, press releases, grant opportunities, training, events, and publications.

About the National Institutes of Health (NIH): NIH, the nation's medical research agency, includes 27 Institutes and Centers and is a component of the U.S. Department of Health and Human Services. NIH is the primary federal agency conducting and supporting basic, clinical, and translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit www.nih.gov.

Media Advisory: New substances added to HHS Report on Carcinogens

Media teleconference to answer questions about the new listings in the 12th Report on Carcinogens.

Media Teleconference

Friday, June 10, 2011 at 2:00-3:00 p.m. EDT

Call 1-785-424-1051 or toll free at 1-800-862-9098 (U.S. and Canada)

Password: NIEHS

What:

The U.S. Department of Health and Human Services (HHS) will release the 12th Report on Carcinogens on Friday, June 10, 2011. The Report on Carcinogens is a science-based document that identifies chemicals and biological agents that represent cancer hazards. Eight new substances have been added in this edition of the Report on Carcinogens. The Report on Carcinogens will be available on Friday after 1:00 p.m. EDT at <http://ntp.niehs.nih.gov/go/roc12>.

Who:

John Bucher, Ph.D.
Associate Director
National Toxicology Program
National Institute of Environmental Health Sciences
National Institutes of Health
U.S. Department of Health and Human Services

The Report on Carcinogens is a congressionally mandated document that is prepared for the HHS Secretary by the National Toxicology Program (NTP). The NTP is an interagency program administered by the National Institute of Environmental Health Sciences (NIEHS), part of the National Institutes of Health (NIH).

NIEHS supports research to understand the effects of the environment on human health and is part of NIH. For more information on environmental health topics, visit <http://www.niehs.nih.gov> (<https://www.niehs.nih.gov/index.cfm>). Subscribe to one or more of the NIEHS news lists (<http://www.niehs.nih.gov/news/newslist/index.cfm> (<https://www.niehs.nih.gov/news/newsroom/newslist/index.cfm>)) to stay current on NIEHS news, press releases, grant opportunities, training, events, and publications.

The National Toxicology Program (NTP) is an interagency program established in 1978. The program was created as a cooperative effort to coordinate toxicology testing programs within the federal government, strengthen the science base in toxicology, develop and validate improved testing methods, and provide information about potentially toxic chemicals to health, regulatory, and research agencies, scientific and medical communities, and the public. The NTP is headquartered at the National Institute of Environmental Health Sciences (NIEHS). For additional information, visit <http://ntp.niehs.nih.gov> (<https://ntp.niehs.nih.gov/>).

About the National Institutes of Health (NIH): NIH, the nation's medical research agency, includes 27 Institutes and Centers and is a component of the U.S. Department of Health and Human Services. NIH is the primary federal agency conducting and supporting basic, clinical, and translational medical research, and is investigating the causes, treatments, and cures for both common and rare diseases. For more information about NIH and its programs, visit <http://www.nih.gov> (<http://www.nih.gov/>).

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RELATED LINKS

- [13th Report on Carcinogens](https://ntp.niehs.nih.gov/go/roc13) (<https://ntp.niehs.nih.gov/go/roc13>)
- [The 13th Edition of the Report on Carcinogens](#) (324KB)

◀ Previous Release

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[NIH-funded research network to explore oil spill health effects](#)
(<https://www.niehs.nih.gov/news/newsroom/releases/2011/july07/index.cfm>)

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Styrene

Key Points



Styrene

- Reasonably anticipated to be a carcinogen
- Widely used to make plastics and rubber
- Found in tobacco smoke

Report on Carcinogens Status

Reasonably anticipated to be a human carcinogen

What is styrene?

Styrene is a colorless, flammable liquid, which has a sweet odor and is highly volatile. It is an industrial chemical used to make polystyrene and resins, such as reinforced plastic and rubbers.

How is styrene used?

Styrene is widely used to make plastics and rubber, which are used to manufacture a variety of products, such as insulation, pipes, automobile parts, printing cartridges, food containers, and carpet backing.

How are people exposed to styrene?

People are exposed to styrene in the workplace and in the environment.

Workers in certain occupations are potentially exposed to much higher levels of styrene than the general population. For example, workers who fabricate boats, car and truck parts, tanks, and bath tubs and shower stalls with glass fiber-reinforced polyester composite plastics, may breathe in high levels of styrene in the workplace. Workers may also absorb styrene through the skin. Exposures in the workplace have decreased over time.

People may be exposed to styrene through breathing indoor air that has styrene vapors from building materials, photocopiers, tobacco smoke, and other products.

Smokers are exposed to styrene because it occurs in cigarette smoke.

Living near industrial facilities or hazardous waste sites is another way people may be exposed to styrene.

Styrene may also leach from polystyrene containers used for food products, but levels of styrene are very low.

What evidence is there that styrene causes cancer?

Human Studies

The limited evidence for cancer from styrene in humans is from occupational studies showing increased risks for lymphohematopoietic cancers, such as leukemia and lymphoma, and genetic damage in the white blood cells, or lymphocytes, of workers exposed to styrene. There is also some evidence for increased risk of cancer in the pancreas or esophagus among some styrene workers, but the evidence is weaker than that for lymphohematopoietic cancers.

Animal Studies

Styrene caused lung tumors in several strains of mice.

Mechanistic Studies

Exactly how styrene causes cancer is not fully understood, but styrene is converted, in laboratory animals and humans, to styrene-7,8-oxide, which is listed in the Report on Carcinogens as *reasonably anticipated to be a human carcinogen*. Styrene-7,8-oxide causes genetic damage and has been found in the blood of workers exposed to styrene.

What are some things I can do to prevent exposure to styrene?

- Stop smoking. Styrene is found in tobacco smoke.
- Limit children's exposure to tobacco smoke.
- Adhere to federal government regulations.

Workers and employers should practice good occupational health behaviors. This may include wearing protective clothing, respirators, and gloves. Work places should be well ventilated.

Where do I go for more information?

National Toxicology Program
<https://ntp.niehs.nih.gov/go/roc>

Agency for Toxic Substances and Disease Registry
<https://go.usa.gov/xN6FR>

National Institute for Occupational Safety and Health
<https://www.cdc.gov/niosh/topics/styrene>
Occupational Safety and Health Administration
<https://www.osha.gov/SLTC/styrene>

Report on Carcinogens

The Report on Carcinogens is prepared by the National Toxicology Program, an interagency group coordinated by the U.S. Department of Health and Human Services. The report identifies agents, substances, mixtures, or exposures in two categories: *known to be a human carcinogen* and *reasonably anticipated to be a human carcinogen*. **The full Report on Carcinogens is available at <https://ntp.niehs.nih.gov/go/roc>.**

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Facts about Styrofoam[®] Litter (Expanded Polystyrene Foam)

“Polystyrene Foam” in the Marine Environment

- Expanded polystyrene foam (EPS), (commonly known as Styrofoam[®]) is pervasive in the marine environment. Like most plastics, polystyrene is lightweight and floats. When littered, it is carried from streets and through storm drains out to the ocean.¹
- Plastics, including EPS, *photodegrade*. That is, they break down into smaller and smaller pieces and marine animals easily mistake polystyrene for food.²
- The lifetime of plastics in the marine environment is unknown. Some researchers feel that the composition of conventional petroleum-based plastics as durable polymers means they will degrade to increasingly smaller sizes but never disappear.³
- Roughly 80 percent of marine debris originates from land-based sources. Plastics comprise 90 percent of floating marine debris.⁴
- A study of beach debris at 43 sites along the Orange County coast found EPS was the second most abundant form of beach debris.⁵

Human Health Effects from PS and Styrene

- EPS is made using the monomer, Styrene, a lab animal carcinogen and a possible human carcinogen and neurotoxin. Styrene can migrate from polystyrene containers into food and beverages when heated, or in contact with fatty or acidic foods.⁶
- Over 13 billion pounds of Styrene were produced in the US in 2006, 65% of it was used in manufacturing polystyrene.
- Styrene residues are found in 100% of all samples of human fat tissue.⁷
- The Food and Drug Administration has determined that the styrene concentration in bottled drinking water should not exceed 0.1 part per million (ppm).⁸ The U.S. EPA drinking water standard is 1 ppm.
- Styrene can be found in air, water, and soil after release from the manufacture, use, and disposal of styrene-based products.⁹
- Styrene exposure increases the risk of leukemia and lymphoma and is a neurotoxin.¹⁰
- Workers in polystyrene products manufacturing are exposed to many harmful chemicals, including Styrene, Toluene, Xylene, Acetone, Methyl Chloride, and Methyl Ketone.¹¹
- Occupational exposure to Styrene increases risk of lymphoma, leukemia, lung tumors, pancreatic cancer, urinary bladder cancer, prostate cancer, and colorectal cancer. High rates of neurotoxicological effects have been reported in workers, including slowed reaction time, effects on balance and spatial orientation, hearing problems, concentration problems, and decreased color discrimination. Some studies also show significant decrease in sperm count and increased sperm abnormality.¹²

Local jurisdictions spend millions cleaning litter¹³

- Caltrans spends approximately \$60 million a year to remove litter and debris from roadsides and highways.
- The County of Los Angeles (L.A.) spends \$18 million annually on litter cleanup and education.

- Some coastal communities spend considerable funds on beach cleaning. For example, L.A. County collects over 4,000 tons of trash annually on its beaches. In 1994, it cost the County over \$4 million to clean 31 miles of beaches.
- Since 2001, Southern California cities have spent in excess of \$1.7 billion cleaning trash out of storm drain systems leading to the L.A. River and Ballona Creek in order to comply with stormwater regulations.

PS Litter – Measureable Reductions from PS Foodware Ban

- One year after implementation of the San Francisco ordinance that prohibits the use of EPS foodware, San Francisco’s litter audit showed a 36% decrease in EPS litter.¹⁴

PS Food Packaging is Not Recyclable

- EPS food packaging is typically not “clean” enough to be recycled.¹⁵
- EPS has a very low recycling rate. According to a 2004 study by the California Integrated Waste Management Board, of the 377,580 tons of polystyrene produced in the state, only 0.8% is recycled. Of that, only 0.2% (310 tons) of polystyrene food service packaging is recycled.¹⁶

Alternatives to Polystyrene for Food Packaging

- Clean Water Action does not support the use of non-recycled (virgin) paper products as this trades the environmental burden posed by EPS for a burden on precious forest resources- trees are absolutely essential to combat global warming and maintain healthy ecosystems.
- Compostable and biodegradable plastic does not break down in the marine environment.
- Compostable and degradable plastics are designed to degrade only in compost. Therefore, compostable and degradable plastic packaging should only be used in jurisdictions that collect compostable waste. These products must meet ASTM standards.

Local Jurisdictions Responding with Prohibitions on PS Foodware

- To date, 47 cities and counties in California have banned or restricted the use of polystyrene food packaging. <http://www.cleanwateraction.org/feature/ban-the-foam>
- In the City of Santa Monica, for example, local businesses have successfully switched to more sustainable alternatives.¹⁷

Local Business Unaffected

- The City of San Francisco has had over 3,000 businesses come into compliance with the ban and none have filed any notices of financial hardship which is an option under the city’s ordinance.
- The City of Millbrae Chamber of Commerce surveyed their members when the city was considering a ban. They decided that they would support the ban and make it a publicity opportunity- several restaurants joined the Green Business program and transitioned earlier than the ban. They were happy with the PR they received from being early adopters. Now, according to the Chamber, the costs of alternative packaging are decreasing and the products are much more widely available. Their members find these products at Costco and Smart & Final.¹⁸

¹ California Coastal Commission / Miriam Gordon (2006) "Eliminating Land-based Discharges of Marine Debris in California: A Plan of Action from The Plastic Debris Project," at 2 and 15 www.plasticdebris.org

² J.G.B. Derraik, "The pollution of the marine environment by plastic debris: a review" *Marine Pollution Bulletin* 44 (2002): 843; Gregory, M.R., Ryan, P.G. "Pelagic plastics and other seaborne persistent synthetic debris: a review of Southern Hemisphere perspectives" in Coe, J.M. Rogers, D.B. (Eds.), *Marine Debris—Sources, Impacts and Solutions*, (1997) Springer-Verlag, New York, pp. 4 9-66.

³ Coastal Commission at 22; H. Kanehiro, T. Tokai, K. Matuda, "Marine litter composition and distribution on the seabed of Tokyo Bay," *Fisheries Engineering* 31 (1995): 1 95-199.

⁴ U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of Public and Constituent Affairs, (1999) "Turning to the Sea: America's Ocean Future;" United Nations Environment Programme (1995) "Global Programme of Action for the Protection of the Marine Environment from Land-based Activities." Note by the secretariat. UNEP (OCA) /LBA/IG.2/7.

⁵ S. Moore *et al.*, (2001) "Composition and Distribution of Beach Debris in Orange County, California," *Marine Pollution Bulletin* 42.3: 241-245. Plastic pellets used to manufacture plastic products was the most abundant type of debris.

⁶ Agency for Toxic Substances & Disease Registry, U.S. Department of Health and Human Services: *ToxFAQs for Styrene*, September 2007: <<http://www.atsdr.cdc.gov/tfacts53.pdf>>; International Agency for Research on Cancer, "Overall Evaluations of Carcinogenicity to Humans," <<http://monographs.iarc.fr/ENG/Classification/crthallist.php>>. J.L. O'Donoghue, *Neurotoxicity of Industrial and Commercial Chemicals*: Vol. 2, CRC Press, Inc., Boca Raton, Florida, 1985, pages 127-137.

⁷ *Styrene, CASRN: 100-42-5 (Human Health Effects)*. Toxnet Hazardous Substances Data Bank, National Library of Medicine, Revised November 1, 1994.

⁸ Ibid.

⁹ ASTDR (see note 6)

¹⁰ US EPA, Air Toxics Website, <http://www.epa.gov/ttn/atw/hlthef/styrene.html#ref3>; see also note 7.

¹¹ CASRN, note 7.

¹² CASRN, note 7.

¹³ Cost information cited from the following: Gordon Environmental Consulting and Ocean Protection Council, "An Implementation Strategy for the California Ocean Protection Council Resolution to Reduce and Prevent Ocean Litter," November 2008, p. 4

¹⁴ City of San Francisco Streets Litter Re-Audit 2008. Available at: http://sfenvironment.org/downloads/library/2008_litter_audit.pdf.

¹⁵ Ibid.

¹⁶ California Integrated Waste Management Board (December 2004), "Use and Disposal of Polystyrene in California: A Report to the California Legislature," Table 4, Page 14.

¹⁷ City of Santa Monica Environmental Programs Division, "Container Successes," <http://www.smgov.net/epd/business/container_successes.htm> (Accessed 7/21/08).

¹⁸ Conversation with John Ford, President Millbrae Chamber of Commerce

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POLYSTYRENE (STYROFOAM) ORDINANCE FACT SHEET

Contra Costa County Climate Leaders

A project of Generation Green - a 501(c)(3) nonprofit organization

Find Links to Other Local Government Policy Opportunities at

www.cccclimateleaders.org



WHAT?

Now that a statewide ban in single-use plastic bags is in place, polystyrene is the next front in the battle against ubiquitous and harmful plastic waste. Polystyrene's story begins in the first half of the 20th century, but it didn't become a staple of our everyday lives until the second half, when world production of plastic resins increased [25 fold](#). Before long, polystyrene was synonymous with take-out food, barbeque plates, and disposable coffee cups—Americans today still use an estimated [25 billion](#) foam cups each year. Even though Polystyrene is commonly known as Styrofoam, that's just a name-brand owned by the Dow Chemical Company.

WHY?

Polystyrene contains the chemical [styrene](#), which has been [linked to](#) cancer, vision and hearing loss, impaired memory and concentration, and nervous system effects...the list goes on. What happens when you eat hot foods or drink liquids from styrofoam plates and cups is the Styrene [leaches out](#) of the Styrofoam and into our bodies. Like many chemicals, we know about their health effects from worker exposures. [Prolonged effects](#) of chronic styrene exposure that many manufacturing workers face include: depression, chronic headaches, fatigue, and weakness, as well as effects on kidney function and blood.

The EPA released a report that listed the [polystyrene manufacturing process](#) as the fifth largest creator of hazardous waste. There are [57 chemical by-products](#) released during the manufacturing process of polystyrene, polluting the air, land, water and communities that live near the facilities. Styrofoam is no longer manufactured with CFC (notorious ozone-depleting chemical), but still uses HFCs (hydrofluorocarbons) that are still linked to depleting the [ozone layer](#) and affecting [global warming](#).

As if the public health impact of polystyrene isn't enough, its environmental effects are well documented. It takes 500 years to decompose, and it takes up 25-30% of our world's landfills. Our lakes, waterways and oceans are suffering thanks to Styrofoam waste. Scientists recently [estimated](#) that the world's oceans contain more than 5 trillion floating plastic particles, which have a combined weight of 250,000 tons.

WHO?

A number of environmental groups continue to advocate for policy restrictions on polystyrene – including, but not limited to : Californians Against Waste, California Integrated Waste Management Board, Clean Seas Coalition, Clean Water Action, Coastkeepers , Earth911, Environment California, Heal the Bay, SaveSFBay, and Surfrider.



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WHERE?

The good news is that more and more cities and counties are taking a stand against plastic pollution in the Bay. **80% of Bay Area population is living in a jurisdiction that has banned plastic bags and 62% are living in places that have banned Styrofoam food ware.** [This map](#) shows cities and counties in the Bay Area have already banned the use of plastic bags and/or Styrofoam food containers and what each ordinance entails and this is a [list version](#) (more up to date).

[Sixty-four](#) California cities and counties totaling approximately nine million residents have already enacted local foam bans because they understand the urgency of this issue. Cities with bans in Contra Costa County include Martinez, Pittsburg, Walnut Creek, Lafayette, El Cerrito, Hercules and Richmond. Nearby counties with ordinances includes Alameda, Marin, Santa Clara, Santa Cruz and Sonoma Counties. The [first Styrofoam ban](#) was passed in 1988 by the city of Berkeley.

In all of these jurisdictions, food vendors provide their take out in readily available and cost-comparable, alternative packaging including, paper, plastic, aluminum foil, and biodegradable and compostable materials, many of which are manufactured right here in California. There has been no indication of adverse business or other negative economic effects related to the banning of foam food ware in the cities and counties that have already done so, as explained [here](#).

San Francisco recently passed the strictest polystyrene ordinance in the United States (to be effective 1/1/18). They unanimously passed an ordinance banning the sale of any product made from the petroleum-based compound including not only disposable dishware but packing materials, egg cartons, mean trays, beach toys and coolers.

In 2012 Los Angeles Unified School District (LAUSD), the largest school district in the state, announced it would stop using Styrofoam food trays for student lunches. We can listen to these bright young students speaking about why they banned Styrofoam in [this video](#) – these students are articulate, passionate, and above all else, eloquent in their defense of the environment. They understand the perils of the future they will face tomorrow if the problem of disposable, single-use plastic pollution isn't addressed today.

A statewide ban on polystyrene failed in 2012 (SB568) but newly authorized legislation was authorized in early 2017 ([SB705](#)) and is currently making its way through the Senate. This legislation would not be effective until 2020 so there is still work to be done at the local level to reduce plastic pollution in our waterways.

WHEN?

There are hidden costs to everyone embedded in every piece of thrown-away plastic product. In this case, they include the cost of cleaning up the litter on streets and waterways and the incalculable damage to the marine environment. It's up to us to take action now to as a continued commitment to a healthy and sustainable community for the sake of future generations.

5/30/17





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AB-1594 Ocean protection: plastic pollution. (2017-2018)

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Date Published: 06/26/2017 09:00 PM

AMENDED IN SENATE JUNE 26, 2017

AMENDED IN ASSEMBLY APRIL 17, 2017

CALIFORNIA LEGISLATURE— 2017–2018 REGULAR SESSION

ASSEMBLY BILL

No. 1594

Introduced by Assembly Member Bloom

February 17, 2017

An act to add Section 35626 to the Public Resources Code, relating to ocean resources.

LEGISLATIVE COUNSEL'S DIGEST

AB 1594, as amended, Bloom. Ocean protection: plastic pollution.

Existing law, the

The California Ocean Protection—Act, Act establishes the Ocean Protection Council in state—~~government,~~ *government* and prescribes the functions and duties of the council with regard to the protection and conservation of coastal waters and ocean ecosystems.

~~This bill would require the council, on or before March 1, 2018, to compile existing data identifying the primary sources and types of ocean plastic pollution, as determined by an analysis of beach cleanup efforts in the state, including recommendations to be provided to the Legislature regarding legislative action or other strategies that may be implemented by the state to reduce plastic pollution on state beaches and in ocean waters. The bill would require the council, by the same date, to provide a report to the Legislature on the status of a 2007 council resolution that outlined a 13 point plan of action to prevent and reduce marine debris. The bill would also make related legislative findings and declarations regarding the need to prevent and clean up ocean waste, including plastic pollution.~~

Existing law provides that any action to increase recycling taken by the Division of Recycling in the Department of Resources Recycling and Recovery, or by any person or entity, affecting, among other things, the method of invoicing the sale of beverages as provided is not a violation of specified laws relating to business practices.

This bill would provide that any action to increase recycling taken by the Division of Recycling in the Department of Resources Recycling and Recovery, or by any person or entity, affecting, among other things, the method of invoicing the sale of any food or drinks for the purposes of increasing food and drink packaging recycling is not a violation of specified laws relating to business practices. The bill would also make findings and declarations regarding plastic and packaging waste in the state's waste stream and would state that it is the intent of the

Legislature to increase the diversion of single-use takeout food packaging while reducing a primary source of permanent litter and marine debris.

Vote: majority Appropriation: no Fiscal Committee: yes Local Program: no

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 35626 is added to the Public Resources Code, to read:

35626. (a) The Legislature finds and declares all of the following:

- (1) Plastic and packaging waste represents a significant and fast growing component of the state's waste stream. California disposes of more than three million tons of plastic packaging waste annually.
- (2) With the sole exception of plastic beverage containers covered by the California Beverage Container Recycling and Litter Reduction Act (Division 12.1 (commencing with Section 14500)), little of generated plastic is currently recycled. Excluding beverage containers, less than 5 percent of plastic packaging is currently recycled.
- (3) Plastic, including, but not limited to, polystyrene and disposable food service packaging litter and the resulting marine debris present more than an aesthetic problem as this litter can be a danger to marine organisms through ingestion and entanglement.
- (4) This litter and marine debris also present a serious and growing threat to water quality, the beneficial uses of the waters of the state, and marine recreational human use, and they threaten the ability of California's waters and the Pacific Ocean to sustain aquatic life.
- (5) According to a report published by the World Economic Forum and the Ellen MacArthur Foundation, there could be more plastic than fish, by weight, in the ocean by 2050, if we continue on our current track.
- (6) Each year thousands of Californians volunteer countless hours to clean up plastic and disposable food service packaging litter from public roadways, beaches, parks, and other areas of the state.
- (7) California's aquatic and marine environments are increasingly threatened by the amount of plastic and disposable food service packaging that is carried by stormwater runoff.
- (8) Under a consent decree, a Total Maximum Daily Load (TMDL) for trash is required to be developed for all impaired waters within the state within the next decade. For example, the TMDL for the Los Angeles River and the Ballona Creek Watershed requires that the amount of trash be reduced to zero to protect beneficial uses.
- (9) The costs to state agencies and local governments to comply with existing TMDL requirements, pending TMDL requirements, or the TMDL requirements yet to be developed will run into billions of dollars.
- (10) Data collected during California's annual Coastal Cleanup and the 1999 Pilot Litter Study by the Department of Conservation indicate that plastic and disposable food service packaging represent some of the most commonly littered items.
- (11) Disposable food service packaging is used "on the go" when access to trash and recycling receptacles is most limited. Plastics generally can become inadvertent litter even if initially properly discarded, when they are carried by wind from uncovered trash cans and dumpsters, vehicles, and solid waste facilities, including landfills.
- (12) The benefits of reducing, recycling, and composting plastics and disposable food service packaging will have a direct positive impact on California's economy.
- (13) A 1993 study by the California Research Bureau concluded that ocean-dependent industries add approximately seventeen billion three hundred thousand dollars (\$17,000,300,000) and 370,000 jobs to California's economy, almost ten billion dollars (\$10,000,000,000) of which is related to nonresident coastal-based tourism.
- (14) Compounding the problem of plastic packaging waste is that this material is nonbiodegradable and litter prone. Even when properly disposed, lightweight plastic packaging can be blown from trash cans, garbage trucks, and landfills.
- (15) Nonbiodegradable plastic litter poses a real and growing threat to water quality and the marine environment.
- (16) While more than 100 jurisdictions in California have addressed this problem in ~~part~~, *part* by phasing out the use of nonrecyclable, noncompostable polystyrene takeout food packaging, thus far only a few jurisdictions have

extended ~~phase-outs~~ *phase outs* to include other nonrecyclable and noncompostable plastic takeout food packaging.

(17) On February 8, 2007, the California Ocean Protection Council adopted a resolution outlining a 13-point plan of action to prevent and reduce marine debris.

(18) Consistent with the California Ocean Protection Council's plan of action described in paragraph (17), *it* is the intent of the Legislature to increase the diversion of ~~single-use~~ *single-use* takeout food packaging while reducing a primary source of permanent litter and marine debris.

~~(b)(1) On or before March 1, 2018, the council shall do both of the following:~~

~~(A) Provide a report to the Legislature on the status of the items identified in the resolution adopted by the California Ocean Protection Council described in paragraph (17) of subdivision (a).~~

~~(B) Compile existing data identifying the primary sources and types of ocean plastic pollution, as determined by an analysis of statewide beach cleanup efforts, including recommendations to be provided to the Legislature regarding legislative action or other strategies that may be implemented by the state to reduce plastic pollution on state beaches and in oceanwaters.~~

~~(2)(A) A report submitted to the Legislature pursuant to subparagraph (A) of paragraph (1) shall be submitted in compliance with Section 9795 of the Government Code.~~

~~(3)(B) The requirement for submitting a report imposed under subparagraph (A) of paragraph (1) is inoperative on March 1, 2022, pursuant to Section 10231.5 of the Government Code.~~

(b) Any action to increase recycling taken by the Division of Recycling in the Department of Resources Recycling and Recovery, or by any person or entity, affecting scrap values, the quantities of materials being recycled, or the method of invoicing the sale of any food or drinks for the purposes of increasing food and drink packaging recycling is not a violation of the so-called Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code) and the Unfair Practices Act (Chapter 4 (commencing with Section 17000) of Part 2 of Division 7 of the Business and Professions Code). This section does not apply to any action taken by a recycling center to increase the recycling of beverage containers.

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Bay Area Bag and Styrofoam Bans

Plastic bags and polystyrene (Styrofoam) food ware are two of the most common pollutants plaguing the San Francisco Bay.

(<http://www.savesfbay.org/bay-vs-bag>)

The good news is that more and more cities and counties are taking a stand against plastic pollution in the Bay. This map shows which cities and counties in the Bay Area have already banned the use of plastic bags and/or Styrofoam food containers and what each ordinance entails. As of today:

- **80% of Bay Area population is living in a jurisdiction that has banned plastic bags.**
- **62% are living in places that have banned Styrofoam food ware.**

Despite this progress, there is still much work to be done. Want to know how you can help?

- Sign this [petition](https://www.savesfbay.org/secure/dont-let-street-litter-become-bay-trash) to encourage Bay Area cities to crack down on Bay trash
- Participate in trash cleanups in your community
- Bring your own reusable bag to the grocery store, pharmacy, hardware store, and on your shopping sprees

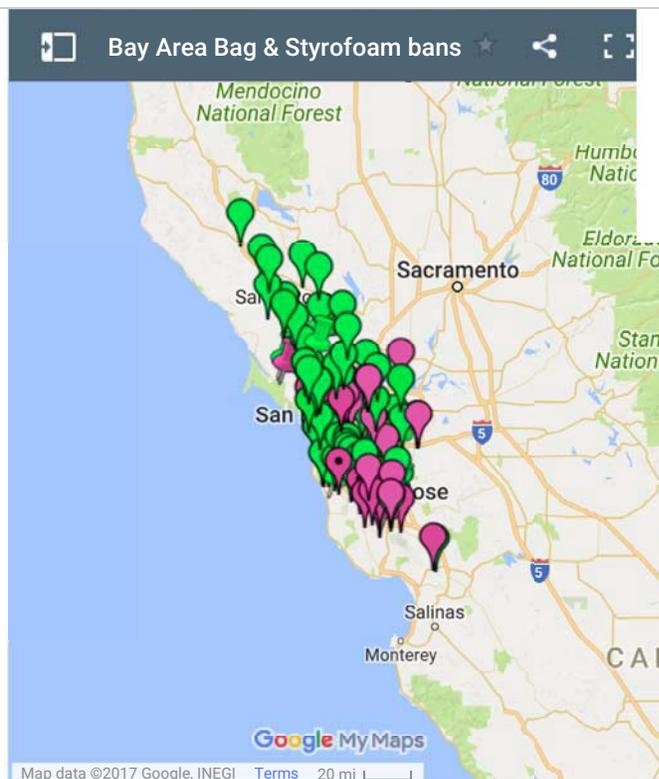
To learn more, please visit our [pollution facts](http://www.savesfbay.org/pollution-facts)

(<http://www.savesfbay.org/pollution-facts>) page.

View [Bag & Styrofoam bans 4-8-14](https://maps.google.com/maps/ms?msid=202860713396561079506.0004f68cc4da9b6dob689&msa=0&ie=UTF8&ll=37.965854,-122.327271&spn=3.20878,5.817261&t=m&source=embed)

([https://maps.google.com/maps/ms?](https://maps.google.com/maps/ms?msid=202860713396561079506.0004f68cc4da9b6dob689&msa=0&ie=UTF8&ll=37.965854,-122.327271&spn=3.20878,5.817261&t=m&source=embed)

[msid=202860713396561079506.0004f68cc4da9b6dob689&msa=0&ie=UTF8&ll=37.965854,-122.327271&spn=3.20878,5.817261&t=m&source=embed](https://maps.google.com/maps/ms?msid=202860713396561079506.0004f68cc4da9b6dob689&msa=0&ie=UTF8&ll=37.965854,-122.327271&spn=3.20878,5.817261&t=m&source=embed)) in a larger map



- Polystyrene ban (county model ordinance adopted by city)
- Polystyrene ban (city ordinance)
- Polystyrene ban (county ordinance)
- Plastic bag or polystyrene ban in progress (county leading regional effort)
- Plastic bag or polystyrene ban in progress (city ordinance)
- Plastic bag or polystyrene ban in progress (county ordinance)
- Plastic bag ban (city ordinance)
- Plastic bag ban WITH paper bag charge (city ordinance)
- Plastic bag ban WITH paper bag charge (county ordinance)



POLYSTYRENE FACT SHEET

Polystyrene threatens the health of San Francisco Bay.

- Plastic food service containers are a major component of urban litter. These products are usually polystyrene or expanded polystyrene or polystyrene foam (most commonly known as Styrofoam), and often wind up in the Bay, where they leach toxins into the water.
- Take-out food and beverage containers, such as Styrofoam cups, are some of the most ubiquitous trash items fouling the Bay and local waterways. Polystyrene foam and plastic food packaging are also one of the biggest culprits in clogging municipal storm drains.
- Polystyrene foam is the second most abundant form of beach debris in California.ⁱ

Polystyrene foam threatens the health of humans and wildlife.

- Studies have found that styrene, a cancer-causing and neurotoxic component of polystyrene, can leach into food and drink, posing a human health risk.ⁱⁱ
- The federal government recently declared styrene to be a likely carcinogenⁱⁱⁱ
- Styrene can be found in air, water, and soil after release from the manufacture, use, and disposal of styrene-based products.^{iv}
- Polystyrene breaks down small pieces that marine animals easily mistake for food.^v
- Polystyrene foam products pose a health threat to wildlife. At least 162 marine species worldwide have been reported to have consumed polystyrene and other litter. Wildlife that eat polystyrene suffer from loss of appetite, reduced nutrient absorption, and starvation.^{vi}

Recycling polystyrene foam has been ineffective.

- Recycled Styrofoam has very little market value and can only be used to make a small range of products, most of which cannot be recycled themselves^{vii}
- Less than one percent of polystyrene foam food ware is recycled in California, making recycling a futile and costly effort.
- Recycling facilities will only recycle polystyrene foam if it is clean, and residents are expected to take their washed foam containers to the recycling centers themselves – Bay Area cities are not collecting this product curbside.
- Even when placed in trash or recycling bins, these lightweight items are often picked up by wind and blown into the gutters – where they flow into creeks and storm drains and then into the Bay and the ocean.

Alternative containers are better for the environment.

- Affordable alternatives include paper products with recycled content and re-useable, washable cups and containers.



- A wide variety of plastic-like containers made from non-petroleum-based sources such as corn starch are available.
- Combined with an effective commercial compost program, these alternatives can reduce landfill loads and polystyrene and petroleum-based plastic pollution in the Bay and ocean.
- Business leaders recently testified in Sacramento that the increase in alternative food ware is being driven by consumer demand. As demand increases, prices will go down.

Litter can be prevented by implementing policies that ban commonly littered items.

- The most effective way to reduce litter is by preventing it at the source.
- Public education on its own will not reduce litter, but is essential to successfully implementing a ban.
- Several cities around the Bay Area have taken action on polystyrene food containers. There are now 50 cities in California and more than 20 in the Bay Area that have banned the use of polystyrene foam. The Regional Water Quality Control Board has recognized product bans as an effective way to prevent trash pollution in our waterways.^{viii}

ⁱ S. Moore et al., (2001) "Composition and Distribution of Beach Debris in Orange County, California," Marine Pollution Bulletin 42:3: 241-245. Plastic pellets used to manufacture plastic products was the most abundant type of debris.

ⁱⁱ California Integrated Waste Management Board (CIWMB). Use and Disposal of Polystyrene in California (2004).

ⁱⁱⁱ National Toxicology Program, National Institute of Environmental Health Sciences, "The Report on Carcinogens, Twelfth Edition," June 2011: <http://www.niehs.nih.gov/about/materials/styrene/styrene.pdf>.

^{iv} Agency for Toxic Substances & Disease Registry, U.S. Department of Health and Human Services: ToxFAQs for Styrene, September 2007: <<http://www.atsdr.cdc.gov/tfacts53.pdf>>; International Agency for Research on Cancer, "Overall Evaluations of Carcinogenicity to Humans," <http://monographs.iarc.fr/ENG/Classification/crthallist.php>. J.L. O'Donoghue, Neurotoxicity of Industrial and Commercial Chemicals: Vol. 2, CRC Press, Inc., Boca Raton, Florida, 1985, pages 127-137.

^v J.G.B. Derraik, "The pollution of the marine environment by plastic debris: a review" Marine Pollution Bulletin 44 (2002): 843; Gregory, M.R., Ryan, P.G. "Pelagic plastics and other seaborne persistent synthetic debris: a review of Southern Hemisphere perspectives" in Coe, J.M. Rogers, D.B. (Eds.), Marine Debris—Sources, Impacts and Solutions, (1997) Springer-Verlag, New York, pp. 4 9-66.

^{vi} City and County of San Francisco, Food Service Waste Reduction Ordinance (Ordinance No 295-06).

^{vii} California Integrated Waste Management Board (CIWMB). Use and Disposal of Polystyrene in California (2004).

^{viii} California Regional Water Quality Control Board San Francisco Bay Region. Municipal Regional Stormwater NPDES Permit (Order R2-2009-0074), October 14, 2009, Provision C-10, pages 84-87.

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Attachment 8

Contra Costa County			
Jurisdiction	Polystyrene ban status	Applicable items	Enforcement measures
Antioch	No ban	-	-
Brentwood	No ban	-	-
Clayton	No ban	-	-
El Cerrito	Enacted in 2013.	Restaurants and city vendors prohibited from distributing expanded polystyrene food-ware.	Code Enforcement Division follows up on complaint based enforcement. Penalties start at \$100 for the 1 st violation and can go up to \$500
Hercules	Enacted in 2008.	Restaurants and city facilities banned from using any Styrofoam beverage cups, takeout containers and other food utensils.	Complaints that are verified and not remedied may be issued a fine, at the City Manager or his/her designees' authorization.
Lafayette	Enacted in 2014.	Restaurants banned from using and/or distributing polystyrene food packaging.	Code enforcement or other city staff may issue a written warning followed by an infraction citation for non-compliance applicable to potential penalties.
Martinez	Enacted in 1995, full compliance in 2015.	Restaurants banned from using polystyrene takeout food packaging.	Spot checks are conducted by Administrative Staff and Code Enforcement. Staff indicated that warnings are usually given, and information regarding alternatives is typically shared with non-compliant businesses.
Oakley	No ban	-	-
Orinda	No ban	-	-
Pinole	No ban	-	-
Pittsburg	Enacted in 1991.	Retail food establishments banned from using polystyrene CFC-processed food packaging. Also as of 1995 requires 50% of food packaging to be recycling.	Code enforcement noted as responsible for enforcing the ban, no specific fines or penalties were noted.
Pleasant Hill	No ban	-	-
Richmond	Enacted in 2009.	Prohibited retail sales, where no retail establishment may sell, rent or otherwise provide any product which is comprised entirely	Warning notices were issued after the first 6 months of adoption.

		or primarily of polystyrene foam.	After the first 6 months, administrative citations issued under Tier 1 fines. 1 st citation: \$250, 2 nd citation: \$500, and 3 rd citation: \$1,000 (per year).
San Pablo	No ban	-	-
San Ramon	No ban	-	-
Town of Danville	No ban	-	-
Town of Moraga	No ban	-	-
Walnut Creek	Enacted in 2014.	City facilities and all food vendors in the city including: restaurants, cafes, delicatessens and food trucks restricted from using polystyrene food based ware	Fines, \$100 for first violation and \$200 for a second within the same 12 months and \$500 for additional violations.

From: KatherineLuttjohann [<mailto:KatherineLuttjohann@astound.net>]
Sent: Monday, August 28, 2017 8:45 PM
To: 'michael.cass@cityofconcord.org.'
Subject: polystyrene/styrofoam ordinance

The City of Concord needs an ordinance restricting the use of polystyrene/styrofoam products. Other cities in the Bay Area have already banned such products and Concord needs to do the same thing.

Thank you,
Katherine Dano-Luttjohann
Concord resident

From: Eileen Hinds [mailto:eileenhinds@gmail.com]
Sent: Tuesday, August 29, 2017 1:01 AM
To: Cass, Michael
Subject: polystyrene/styrofoam

Dear City of Concord:

As a Concord resident and homeowner, I'm very pleased to learn that the City is considering the restriction of polystyrene/styrofoam products. Our neighbors in Martinez, Pittsburg and Walnut Creek took action years ago to help reduce litter. I would love to see our city exert leadership to address the environmental and health dangers posed by these products.

Thank you,
Eileen Hinds
1769 Bishop Drive
Concord 94521

From: Sheila Hill [mailto:sheilahill65@gmail.com]
Sent: Tuesday, August 29, 2017 10:17 AM
To: Concord City Council
Cc: Cass, Michael
Subject: Potential Polystyrene/Styrofoam Ordinance for the City of Concord

Dear City of Concord:

I am thrilled that the City of Concord is finally considering an ordinance restricting the use of polystyrene/styrofoam. In addition to being a litter and landfill problem, this product is toxic to humans and wildlife and is a gross polluter of our watersheds. Our neighbors in Martinez, Pittsburg and Walnut Creek, in addition to many cities and counties in California, have already taken action on this important issue. I respectfully ask each of you individually, and all of you collectively, to support an ordinance - if not for yourselves then for the sake of future generations.

Sincerely,

Sheila Hill

30 Year Concord Resident

From: sdelbou@comcast.net [mailto:sdelbou@comcast.net]
Sent: Tuesday, August 29, 2017 1:49 PM
To: Cass, Michael
Subject: Fwd: Request to Restrict Use of Polystyrene/Styrofoam

Dear City of Concord:

I hope you will consider an ordinance restricting the use of polystyrene/styrofoam products in the City of Concord. Neighbors in Martinez, Pittsburg and Walnut Creek took action years ago to reduce litter and landfill. I think Concord should do the same.

Sincerely,
Suzanne Delbou
Concord Homeowner

From: Kenji Yamada [mailto:hajenso@gmail.com]
Sent: Wednesday, August 30, 2017 7:56 PM
To: Cass, Michael
Subject: I support a styrofoam ban in Concord

Hi Michael - I understand you are the right member of staff to contact with an opinion about the idea of banning Styrofoam (polystyrene) in Concord.

I support the ban. This stuff is a big problem. It's toxic, disperses rapidly into our environment, is very hard to collect or clean up, and like most environmental pollutants, it is NOT a private matter for private choices because it imposes a cost on nonconsenting parties. (In economics jargon, it produces an "external cost".)

From: Melissa J. Reece [mailto:mjreece05@gmail.com]
Sent: Thursday, August 31, 2017 3:00 PM
To: Cass, Michael
Subject: Styrofoam

Dear City of Concord: Thank you for considering an ordinance restricting the use of polystyrene/styrofoam products. Our neighbors in Martinez, Pittsburg and Walnut Creek took action years ago to help reduce litter and landfill.

To learn more about why we need to this, please visit:

<http://www.cccclimateleaders.org/.../polystyrene-styrofoam-or...>