



# City of Culver City

Mike Balkman  
Council Chambers  
9770 Culver Blvd.  
Culver City, CA 90232  
(310) 253-5851

## Staff Report

---

**File #:** 20-766, **Version:** 1

**Item #:** A-2

---

**CC - (1) Discussion of Potential Amendments to Culver City Municipal Code Chapter 11.18, Polystyrene Regulations; and (2) Direction to the City Manager as Deemed Appropriate.**

**Meeting Date:** January 25, 2021

**Contact Person/Dept:** Chanel Kincaid/Public Works Environmental Programs and Operations Division

**Phone Number:** (310) 253-6445

**Fiscal Impact:** Yes ☐ No ☐

**General Fund:** Yes ☐ No ☐

**Public Hearing:** ☐ **Action Item:** ☒ **Attachments:** ☐

**Commission Action Required:** Yes ☐ No ☐ **Date:**

**Public Notification:** (E-Mail) Meetings and Agendas - City Council (03/03/2021)

**Department Approval:** Charles D. Herbertson, Public Works Director/City Engineer (01/14/2021)

---

### **RECOMMENDATION**

Staff recommends the City Council (1) discuss potential amendments to Culver City Municipal Code (CCMC) Chapter 11.18, Polystyrene Regulation, to reduce plastic urban litter and waste from being landfilled and/or entering Culver City's waterways; and (2) provide direction to the City Manager as deemed appropriate.

### **BACKGROUND**

The Ballona Creek Renaissance (BCR) submitted a proposal in July 2016 to the City of Culver City's Sustainability Subcommittee to ban the sale and use of disposable polystyrene food ware containers, cutlery and foam coolers that are not fully encased in another material. BCR indicated that during Ballona Creek cleanup events they have observed a large quantity of foam litter floating down Ballona Creek to the ocean and that it has become the biggest pollution problem in the Santa Monica Bay. Foam's light weight allows it to fly away and it floats on water and travels to the ocean via Ballona Creek, oftentimes crumbling into smaller pieces and eventually embedding itself into the sand at the beach, where it may be mistaken as food and be ingested by wildlife.

In May 2017, the City Council adopted an Ordinance adding Chapter 11.18 to the CCMC, establishing the City's existing polystyrene regulations. In summary, these regulations:

1. Ban the use of single-use polystyrene foam and solid plastic food ware containers, cups, cup lids, bowls, plates, cutlery and straws by food providers and during any events held in City facilities; and
2. Include an undue hardship provision that exempts compliance with the ban by food providers that are able to demonstrate:
  - a. That no reasonable alternatives are available; or
  - b. That compliance would create a significant economic hardship; and
3. Require that food providers ask customers whether they want cutlery included with their take-out order; and
4. Prohibit City retailers from selling polystyrene foam coolers that are not fully encased in another material; and
5. Impose penalties and other provisions contained in CCMC Title 1, Chapter §1.01 General Provisions and Chapter §1.02 Administrative Citations for non-compliance; and
6. Exempt from the food service ware regulations, any food service ware, except for food service ware which contains or utilizes single-use foam polystyrene, that has been determined not to have a reasonably feasible alternative, due to cost, availability, or other factors shall also be exempt from the provisions of this chapter.

Since the enactment of Chapter 11.18, the City has continued to face challenges regarding plastics, including polystyrene in the recycling, waste, and litter stream.

## **DISCUSSION**

In March 2019, BCR submitted another proposal to City Council to amend the existing regulations. City Council directed staff to research the management of single use plastics food service ware and plastic beverage containers in Culver City.

City staff researched bans, ordinances, literature reviews, litter data and conducted interviews with local businesses, municipalities, and Non-Governmental Organizations (NGOs) to facilitate the City Council in evaluating method(s) to reduce the environmental and economic impacts caused by plastics, food service ware and beverage containers. Staff was prepared to provide City Council a presentation of findings in March 2020, but due to the COVID-19 pandemic, the presentation was delayed.

On November 10, 2020, staff made its presentation to the City Council Sustainability Sub-Committee. Based on staff's research and the Subcommittee's feedback, staff determined the following options may be effective for overall environmental and economic benefits for the community, which are being presented for City Council's consideration:

### **I. Effective July 2021, consider a ban on the following:**

- 1. Consider a ban on the commercial packaging, sale and distribution of polystyrene meat, fish, poultry, vegetable, cheese trays, egg cartons.***

- 2. Consider a ban of all plastic beverage containers at City facilities and City sponsored events, or consider a ban on plastic water bottles at City facilities and City sponsored events.*

**II. Effective January 2022, consider the following:**

- 3. Consider a ban on polystyrene packaging (e.g. peanuts) used for shipping merchandise and packages.*
- 4. Consider a requirement that all food service ware used by food establishments for take-out and/or delivery be composed of 100% fiber.*

**III. Effective January 2023, consider the following:**

- 5. Consider a ban on the commercial sale of polystyrene cups, plates, plastic straws, stirrers, lid plugs and utensils.*
- 6. Consider a requirement that “dine in” reusable service ware be required for all food establishments offering dine-in service.*

### **Plastic Waste Data**

A new report by the University of California Los Angeles Luskin Center for Innovation (UCLA LCI) highlights the processing and recyclability challenges associated with plastic waste. Key findings include that “available evidence suggests that there are adverse environmental, economic, energy-related, and human health-related impacts associated with plastic production and plastic waste in Los Angeles County. Single-use plastic ware is a contributing factor to all these impacts, and its outsized representation in litter suggests a particularly significant impact in the environmental sphere, the area for which impact in Los Angeles County is most acute”.

Plastic food service ware is defined as any item that may hold, store, serve, consume or transport any food or beverage, including, but not limited to, any container, bowl, plate, tray, glass, carton, box, cup, utensil, straw, stirrer, lid, sleeve, condiment container, spill plug, plate liner, or wrapper. City staff was not able to find markets for alternative (i.e. non-plastic) beverage containers larger than one liter.

The difference in the technical versus the actual recyclability is part of the problem behind the environmental, economic, energy and human-health-related impacts associated with plastic production and waste in L.A. County, which the UCLA LCI study reveals. In Culver City there are misconceptions of what is an acceptable recycling material due to the conditions that are beyond the City’s control, including processing facility machinery/operations and a policy change in China in 2018.

China’s limits on recyclable waste materials caused a ripple effect across the international recycling markets. These new strenuous thresholds resulted in Culver City going from receiving \$25.00/ton in 2016 to paying \$84.00/ton in 2020 (i.e. what the city must pay to process recyclable materials). Materials that were historically valued such as rigid plastics used for food service ware (i.e. plastics

#3 - 5, 7), represent approximately 0.25% of Culver City's recycling stream. These materials are either warehoused (in hopes of future improved markets) or landfilled. It is important to note that waste characterization percentages are based on tonnage not volume. Plastics are lightweight and, therefore, calculating their impact on the waste stream by tonnage, as opposed to calculating it by volume, minimizes or under-represents their actual impact on the waste stream. Polyethylene terephthalate (PET) plastics, which have been assigned the Resin Identification Code of "1," and High density polyethylene (HDPE) plastics, which have been assigned Resin Identification Code of "2," have the sturdiest markets and represent approximately 1.24% (by volume) of the recycling waste stream. PET's are used to make beverage containers and HDPE's are used to make milk jugs and detergent bottles.

### Litter

City staff contacted multiple organizations regarding litter collection characterizations. The most comprehensive regional data available was through the Trash Information and Data for Education and Solutions (TIDES). Part of an Ocean Conservancy program, TIDES is the largest ocean trash dataset. Based on their data from 2015 -2019, plastic disposable food service ware including cups, straws, lids, any containers, bowls, plates, trays, utensils, stirrers, sleeves, condiment containers, and/or spill plugs contributed to 51% of the street and ocean litter in Los Angeles County. A comprehensive list of the top 25 contaminants includes:

1. Cigarette Butts; 26.08%
2. Food Wrappers (candy, chips, etc.); 14.44%
3. Bottle Caps (Plastic); 10.65%
4. Other trash (clean swell); 6.79%
5. Straws, Stirrers; 6.66%
6. Beverage Bottles (Plastic); 2.55%
7. Grocery Bags (Plastic); 2.27%
8. Lids (Plastic); 2.24%
9. Bottle Caps (Metal); 2.20%
10. Take Out/Away Containers (Plastic); 2.16%
11. Forks, Knives, Spoons; 1.98%
12. Beverage Bottles (Glass); 1.74%
13. Take Out/Away Containers (Foam); 1.69%
14. Cups, Plates (Plastic); 1.69%
15. Other packaging (clean swell); 1.54%
16. Beverage Cans; 1.34%
17. Cigar tips; 1.27%
18. Cups, Plates (Paper); 1.15%
19. Personal Hygiene (clean swell); 1.14%
20. Balloons; 1.02%
21. Other Plastic Bags; 0.98%;
22. Paper Bags; 0.89%
23. Cups, Plates (Foam); 0.74%
24. Toys; 0.66%
25. Strapping Bands; 0.62%

Of litter categorized measuring less than 2.5 cm, 97% were plastics.

1. Plastic Pieces; 67%
2. Foam Pieces; 30%
3. Glass Pieces; 3%

Although comprehensive litter data is limited for Culver City Ballona Creek, staff was able to collect data from 2008 through 2012. Plastic food service ware represented an average of 42% of littered material (Ocean Conservancy). Other studies, including Bay Area litter studies, found that food and beverage packaging comprises the majority of street litter, half of which comes from fast food and take-out food establishments (Clean Water Action's "Taking out the Trash" Bay Area Litter study (2011)).

### Economic

Non-recyclable food and beverage packaging may be less expensive to purchase for the business owner but, is costly to remove from the waste stream and reduces the quality and value of recyclables. A study of over 90 counties in California recently concluded that taxpayers are paying \$428,000,000 per year to clean up plastic through storm drain management, street sweeping, and marine cleanups. Culver City spent \$1.88 million dollars in fiscal year 2018 - 2019, and is projected to spend \$23 million dollars in fiscal year 2019 - 2023, for stormwater management programs.

Currently, Culver City's recycling contamination rate of 26% well exceeds China's 0.5% maximum threshold, therefore, the City is paying for additional processing to clean the City's recycling stream. The City has invested in education programs that have resulted in lowered contamination, but the City continues to be faced with existing contamination rates far exceeding China's maximum threshold. Cost savings may result from decreasing non-recyclable material in the recycling container.

### Plastic Waste Conclusion

Due to aforementioned recycling and recovery difficulties, rigid plastic food service ware, regardless of resin type, have harmful human health and environmental impacts. Alternative items for plastic food service ware are available at several websites. However, plastic straws may be an exemption due to Title III of the Americans with Disabilities Act (ADA) and California state law. According to Title III, businesses are expected to provide reasonable access to goods and services. Disability advocates say that it is best practice for places of public accommodation to have some plastic straws available in order to ensure reasonable access to goods and services.

#### **I. Consider a ban of all plastic beverage containers at city facilities and city sponsored events, or**

#### **II. Consider a ban on plastic water bottles at city facilities and city sponsored events.**

### Plastic Beverage Containers

### ***Environmental***

Plastic beverage bottles, like plastic food service ware, impact the environment. The entire life cycle of bottled beverage bottles uses fossil fuels, water, and its end life results in either being recycled, littered or landfilled.

For water bottles, the bottled water industry says, "bottled water products are extremely efficient in terms of water use compared to some other packaged beverages," says Chris Hogan, spokesman for the International Bottled Water Association (IBWA). The International Bottled Water Association released a study in 2013 to determine how much water goes into producing one liter of bottled water. The results showed that for North American companies it takes 1.39 liters as opposed to the global average of a liter of soda which requires 2.02 liters of water or beer that requires 4 liters of water. Therefore, bottled water has the smallest environmental footprint of all packaged beverages.

Water activists dispute the IBWA study and instead point to short falls when calculating their water use. Bottled water companies (along with many other beverage companies) should include the water in their supply chain, says Ertug Ercin with the Water Footprint Network. Ercin says a true water footprint includes all freshwater used in production, including the water used for packaging. "Packaging makes a significant footprint," he says, adding that three liters of water might be used to make a half-liter bottle. In other words, the amount of water going into making the bottle could be up to six or seven times what's inside the bottle".

### ***Recyclability***

Plastic beverage bottles are mainly made from Polyethylene Terephthalate (PET, #1 resin). PET does have a steady recycling market. The California Department of Resources Recycling and Recovery (CalRecycle), 2018 Biannual Report of Beverage Container Sales, Returns, Redemption, and Recycling Rates reported that 12.48 billion #1 PET beverage bottles were sold and 9.27 billion of these bottles were recycled. This 74% recycling rate indicates that 26% (or 3.21 billion) of these bottles were either landfilled or littered.

### ***Litter***

Together, plastic bottle caps (10.65%) and beverage bottles (2.55%) accounted for 13.20% of material littered with in Los Angeles County. In the Culver City Ballona Creek 2008 - 2012 Ocean Conservancy litter data, plastic beverage bottles represented, 3.31% of litter. Plastic bottle caps were not included as a data set in the 2008 - 2012 information collected.

### ***Economics***

In 2014, the International Bottled Water Association stated that bottled water costs, on average, \$1.21/gallon, whereas, tap water costs less than a half a penny per gallon. Based on these numbers, bottled water is 100 times more expensive than tap water.

Staff has no data regarding prices of beverages other than water.

### **Plastic Beverage Container Alternatives**

## ***Environmental***

Alternatives for plastic beverage containers include aluminum, glass and carton. There are a lot of factors that affect the environmental impact of these alternative materials. Glass and aluminum have both positive and negative environmental attributes.

An aluminum lifecycle analysis found that the production of aluminum cans consumes a lot of energy during the involved mining and transportation processes. The United States relies on importing the ore for processing. In 2014, the United States Geological Survey found that the United States imported approximately 11,800 metric tons of bauxite (bauxite is a group of aluminum oxides). Energy consumption can be decreased if aluminum is made from recycled materials. According to the Aluminum Association, in 2012, 70% of aluminum cans were made from recycled aluminum, which is cheaper to produce than its virgin counterpart.

Glass containers never decompose. They can be recycled endlessly and/or be used as inert materials at landfills. Glass does not contain any harmful chemicals.

Staff has been researching beverages packaged in carton containers. Most of these carton containers claim that their carton is comprised of 70% paper. It is unknown what makes up the other 30% of the carton. If the material has multiple layers, most likely the material is unrecyclable or not compostable, but it is unclear currently.

There are competing claims regarding whether plastics, glass or aluminum is more environmentally beneficial. Staff read multiple lifecycle analysis reports, including a 2009 study conducted by Franklin Associates, for the PET Resin Association (PETRA), of glass, aluminum, and PET soft drink containers. The study found PET bottles produced less solid waste, less greenhouse gas emission, and used less energy than the other two container types. The study compared total energy, solid waste and greenhouse gas emissions per 100,000 ounces of soft drinks packaged in typical 20-oz PET bottles, 8-oz glass bottles, or 12-oz aluminum cans. The PET bottles showed appreciably lower numbers across the board. Whereas, other studies showed that glass had a lower footprint if the bottle was reused.

The benefits to reducing plastic beverages in lieu of the alternative materials would be litter reduction.

## ***Recyclability***

The California Department of Resources Recycling and Recovery (CalRecycle), 2018 Biannual Report of Beverage Container Sales, Returns, Redemption, and Recycling Rates reported that 78% of aluminum is recycled and 22% is landfilled or littered. Glass has a 61% recycling rate, which means that 39% is landfilled or littered.

## ***Economic***

City Council would need to consider alternative container availability, cost (i.e. to the consumer, to the City due to hydration stations; material and labor), water accessibility.

Hydration stations, to supplement water accessibility if the City banned plastic water bottles, would cost approximately \$200,000 to \$400,000. There are approximately 34 total water fountains throughout the City Parks and sufficient water fountains within City facilities for public use. Staff estimates that 20 additional water stations would be needed to supplement public water supply. High

costs stem from the labor and materials required for new water supply and drain lines.

If the City upgraded current drinking fountains, to refillable water bottle hydration stations, the cost would be significantly lower. Replacement, depending on whether the unit is free-standing or wall-mounted, is approximately \$5,000 to \$7,500 for each unit (as they would be tied into existing water supply/drain lines).

### Beverage Container Conclusion

Plastic beverage containers have strong recycling markets and relatively high recycling percentages, yet, plastic materials associated with beverage containers are found in the City's waterways. If City Council decided to ban plastic beverage containers at City Facilities, there should be consideration about the availability of water and about businesses' concerns regarding consumers going outside of Culver City to purchase beverages bottled in plastic. Municipalities mainly have banned plastic beverage containers at City facilities and/or events, the rationale used was that there would be clean, safe water available. Hydration stations were added to meet the needs of the community. Unlike water, the City would not be able to provide alternatives for other beverages, companies would be required to adapt to updated City requirements.

### **III. Effective January 2022 consider that all food service ware used by food establishments for take-out and/or delivery be composed of 100% fiber.**

#### Bioplastic

There are two main categories of bioplastics: bio-based and additive based. Bio-based bioplastics are made from renewable sources such as sugar, starch, and vegetable oils. Additive based bioplastic carbon is made from fossil fuels but contain additives to induce degradation. There are environmental net benefit opportunities with bioplastics.

Bioplastics require less energy and petroleum and are made partially from renewable feedstocks and are supposed to biodegrade. Unfortunately, bio-based or additive bioplastic does not break down properly (or in a timely manner) in a municipal composting facility, including in Culver City's compost processing facility. Therefore, bioplastics are landfilled. Bioplastics also promote single-use and create confusion in the recycling stream. Bioplastics cannot be recycled with any petroleum-based plastics because the bioplastics would contaminate the petroleum-based plastics, rendering the petroleum-based plastics non-recyclable.

City staff was not able to determine the percentage of littered bioplastics. If littered, the biodegradability of plastics is affected by their physical and chemical structure. In general, bioplastics, just like plastics, harm the environment because they do not breakdown quickly in a natural setting.

#### Compostable - Fiber Based

Culver City's processor accepts food and food-soiled paper that is 100% fiber-based and that does not have a plastic lining. Research found that compostable ware that is 100% fiber-based without chemical treatment (Per - and polyfluoroalkyl or PFAS) would produce a favorable environmental



outcome when compared with plastics.

### ***Litter***

Paper cups and plates represent 1.15% of the material littered in Los Angeles County. When littered, fiber-based products will degrade in the natural environment significantly faster than plastics. City staff found no research indicating that fiber-based litter is more harmful to marine life or the environment than are plastics.

### ***Life Cycle Analysis***

The most comprehensive study regarding lifecycle analysis of compostable food service ware is the 2018 report by Franklin Associates to the Oregon Department of Environmental Quality. Their study identified numerous impacts including, but not limited to: global warming, land occupation, aquatic impacts, and human toxicity. Their research found that compostable products performed worse in each topic area when compared to plastics.

The UCLA LCI study noted that the 2018 report lacks sufficient data, as “only seven studies were considered in reaching these conclusions, underscoring the relative dearth of available research analyzing life cycle impacts of compostable food service ware. Additionally, in casting the proverbial wide net, the authors included some older studies that may not be reflective of current conditions. This report also faces shortcomings with regard to distinguishing among categories of compostable materials; in particular, fiber-based materials made from agricultural byproducts are a notable category whose production impacts would be significantly lower than compostable products made from dedicated crop stocks. Widespread adoption of such materials would contribute to the formation of a circular packaging economy, with estimated equivalent benefits in the hundreds of billions of dollars.”

### ***Economics***

During a product comparison, compostable items are generally more expensive than plastic equivalents across all categories. However, due to the increased demand for compostable products, market conditions in the Los Angeles region for compostable products are consumer favorable. “Upon request” policies may reduce the cost of purchase for compostable products (UCLA-LCI).

### ***Compostables Conclusion***

Bioplastics are not a suitable alternative to petroleum plastics because of their inability to be composted by Culver City’s compost processing facility. However, compostable, 100% fiber-based material is a favorable alternative to plastic food service ware. The fiber-based material may help with the confusion of separating material to be diverted since all the material can be placed in the organics bin. Through research, staff has determined that a variety of compostable food service ware products are available at several websites. Challenges may be the cost of products and/or availability of an alternative product that does not have a plastic liner for hot food or beverages.

## **IV. Effective January 2023 consider “dine in” reusable service ware be required for all food**

**establishments offering dine-in service.****Environmental**

The UCLA LCI study found that, no disposable food service ware can beat the environmental footprint of reusable food service ware even when factoring in the energy and water needed to wash plates, cups and utensils. The exact break-even point, however, can vary somewhat among product types, depending on production inputs and rates of loss, theft or breakage or on the exact methods researchers use. Comparative life cycle impacts of reusables compared with disposables are based on greenhouse gas emissions, energy inputs, water use, ecosystem impacts, and solid waste generation.

The most heavily studied comparison is the ceramic coffee cup versus disposable paper or polystyrene cups. Approximately 108 billion disposable cups are landfilled in the United States each year. The manufacturing, transporting and disposing of these single use cups requires 22 billion gallons of oil, produces 26 billion pounds of CO<sub>2</sub> and requires the harvesting of over 20 million trees (Rethink Disposables). As compared to using paper or polystyrene cups, using reusable coffee cups, which can be reused a thousand times in a lifetime, results in a net-positive environmental impact. The break-even points for a reusable cup to produce a net-positive environmental impact over disposables is 18 reuses (when comparing paper cups) and 70 reuses (when comparing polystyrene cups). More recent studies in the area of comparative life cycle impacts find lower break-even points - meaning reusables are becoming more advantageous compared to disposables in a shorter timeframe, possibly due to water and energy efficiencies in current dishwashing or similar appliances.

**Litter**

In regard to litter, the overall environmental impact of reusables is far less than disposables. According to the UCLA LCI study:

1. Replacing single-use plastic food service ware with reusable ware (e.g., multiuse dishware, cups, and utensils) will reduce the negative impacts of plastic waste in Los Angeles County;
2. Expected effects include a reduction in the generation of nonrecyclable plastic solid waste, a decrease in the prevalence of plastic litter, and fiscal benefits to vendors, waste management operators, local governments, and ratepayers;
3. Even accounting for varying methodologies, reusable items result in lower lifetime impacts than disposables.

**Economic**

There are economic challenges with replacing disposable service ware with reusables which include, but are not limited to, the following:

1. Investment in new equipment
  - a. Dishware, dishwasher
2. Reworking everyday practices by businesses

3. Specific health code compliance
  - a. Assembly Bill 619 which permits patrons to bring their own reusable container
4. Increased water and energy use (which may be minor due to efficiency standards in new appliances)
5. Possible increase in staffing that may result in decreased business profits

There may be fiscal benefits to the community of replacing plastic food service ware with reusables by, for example, decreasing contamination of the recycling stream and reducing garbage and litter cleanup costs.

### Reusable Conclusion

Replacing disposable food service ware with reusable alternatives will result in the highest net benefit for the community by reducing waste, litter and greenhouse gas emissions. However, the adoption of reusables will shift food businesses' expenditure toward a larger up-front cost and may change restaurant operations.

### **Conclusion**

This staff report provides data to City Council to make a determination as to options that may be included in adopting amendments to the existing Polystyrene regulations.

Staff is requesting policy direction from the City Council with regard to the following options:

1. Consider a ban for all grocery retail establishments on the use of polystyrene trays for meat, fish, poultry, eggs, vegetables as part of the packaging used in retail.
2. Consider a ban on single-use plastic beverage containers at City owned facilities (less than one liter). This ban will prohibit the use, sale and distribution of plastic beverage containers at City-owned facilities, including events held through rentals or leases; **OR** Consider a ban on single-use plastic water bottles at City owned facilities. This ban will prohibit the use, sale and distribution of plastic water bottles at City-owned facilities, including events held through rentals or leases.
3. Consider a ban on the sale and commercial distribution of polystyrene cups, plates, plastic straws, stirrers, lid plugs and utensils.
4. Consider a ban on polystyrene packaging, for all merchandise shipped and/or packaged within the City of Culver City.
5. Consider requiring that all food service ware used by food establishments for take-out and/or delivery be 100% fiber-based.
6. Consider reusable service ware be required for all food establishments offering dine-in service.

### FISCAL ANALYSIS

There is no fiscal impact associated with the discussion/direction of this matter.

### **ATTACHMENTS**

None.

### **MOTION**

That the City Council:

1. Discuss and consider options to amend CCMC Chapter 11.18, Polystyrene Regulations; and
2. Provide direction to the City Manager as deemed appropriate.