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# CITY OF ALBUQUERQUE

## CITY COUNCIL

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### INTEROFFICE MEMORANDUM

**TO:** All City Councilors

**FROM:** Stephanie M. Yara, Director of Council Services  
Chris Melendrez, Senior Policy Analyst/Legal & Land Use  
Nicole Taylor, Policy Analyst II  
Jeff Hertz, Policy Analyst

**SUBJECT:** Economic Impact Analysis for Proposed O-19-48: Adding A New Article 17 To Chapter 13, ROA 1994, Limiting The Use Of Plastic Single-Use Carryout Bags; Limiting The Use Of Plastic Single-Use Straws; Limiting The Use Of Polystyrene Single-Use Containers; Creating An 'Albuquerque Clean & Green Business' Program; Providing For Administrative Regulations To Carry Out The Provisions (Benton, Davis, Gibson, Borrego)

**DATE:** April 11, 2019

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### EXECUTIVE SUMMARY

Switching from plastic to biodegradable or other alternatives would result in additional costs to both businesses and individuals at the point of sale.

- Plastic Bags- biodegradable film and paper alternatives cost businesses two to five cents more per unit.
- Straws- compostable paper and hay alternatives cost businesses two to five cents more per unit.
- Styrofoam Containers- biodegradable and foil alternatives cost businesses five to 10 cents more per unit.
- Fiber clamshell containers are recommended for common New Mexican foods like chile and enchiladas, and cost about 12 cents more per unit for businesses.
- Depending on whether local businesses choose to charge the ten cent bag fee to its customers, as allowed in the proposed Ordinance, the potential additional annual cost associated with the maximum bag fee for a family of four is \$146.

Considerations should be made for persons who receive SNAP or WIC benefits, or are transit dependent. Other cities that have enacted a similar ban have mandated or allowed a waiver of the bag fee for these individuals.

Cloth shopping bags are one potential alternative to single use plastic bags. Although cloth shopping bags do have the potential for carrying food borne illnesses, they can be washed

regularly to avoid illness. Education will need to be provided to the public on safe use of cloth bags, or other alternatives.

Based on conservative estimates, the City of Albuquerque could avoid using 140 million single-use plastic bags annually if a ban was enacted. Of that amount, 120 million bags would be kept from entering City landfills, and the other 20 million out of storm drain systems and rivers. Using paper bags as an alternative would result in more trash, by weight, entering the landfill; however, paper decomposes at a much faster rate than plastic and results in less contamination of the soil and groundwater.

The study found no data to estimate the cost to recycling facilities for production downtime for removing plastic bags from machinery, but this is a common issue for facilities throughout the U.S. including Albuquerque.

Overall, only about 6.5% of all plastics are recycled, the rest ultimately ends up in landfills, or as litter. It is estimated that an effective plastic bag ban could avoid \$3.4 million in cleanup costs for removing plastic bag debris from City streets, storm drains and river systems.

Choosing which material is best for the environment depends on the type of environmental impacts that are of most concern. Though plastics are shown to produce less greenhouse emissions, they are also known to have detrimental effects on the environment and wildlife. Since most studies on the effects of plastics on wildlife focus on marine and ocean environments, a study would need to be done locally to determine the effects on wildlife in Albuquerque, especially near the Rio Grande River Bosque system.

## **BACKGROUND**

Ordinance O-19-48 was introduced on January 7, 2019 by Councilors Isaac Benton, Pat Davis, Diane Gibson and Cynthia Borrego and referred to the Finance and Government Operations Committee (FGO). At the FGO meeting on January 28, 2019, Councilor Don Harris requested that an Economic Impact Analysis (EIA) of the bill be completed. The bill was then sent to the full Council with a recommendation of a due pass. On February 20, 2019, the bill was deferred to the April 15, 2019 meeting.

## **SUMMARY OF PROPOSED BILL**

Ordinance O-19-48 proposes to prohibit retail establishments from providing single use plastic bags, polystyrene containers (carryout containers – commonly referred to as Styrofoam), or plastic straws to their customers.

Instead of these items, retailers could provide single use paper bags or non-polystyrene carryout containers so long as the bags and containers are recyclable, and the retailer provides notice either on the bag/container or at the point of sale that the bag/container can be recycled. The ordinance permits (but does not require) retailers to charge up to 10-cents/per for the bags or containers required by this ordinance.

With respect to straws, only paper or bio-degradable straws would be permitted except that plastic straws may be given out based on need – physical or medical conditions.

These requirements would apply only to items provided at the point of sale, not items that are prepackaged or prepared for display, and not to bags used for produce, bulk, or similar items placed in bags by the consumer in the store but prior to the point of sale. The purpose is to reduce the environmental, wildlife, and litter impacts from point of sale plastic bags.

The ordinance also establishes a “Clean and Green Business Program” wherein businesses within the City can be recognized for their environmental stewardship by recycling, complying with this ordinance, providing multi-use shopping bags, and posting notices encouraging recycling.

If enacted, the ordinance would go into effect on January 1, 2020 and during the first 180 days thereafter, the City may issue warnings instead of citations or notices of violation. And at least 180 days prior to going into effect, the Mayor would be required to initiate a public education campaign about the requirements of the ordinance and the clean and green program.

Finally, the ordinance calls for a committee of city staff members and a representative of the small business advisory council to be convened to conduct a study within two years, to document the results of the ordinance.

### **ECONOMIC IMPACT ANALYSIS**

Council staff used existing studies and data to prepare this report. Staff also collected input from local restaurant, food supply, and grocery store owners/managers, as well as staff at the City’s Solid Waste and Environmental Health Departments.

Councilor Harris, the sponsor of the EIA request, requested that the following questions and issues be explored through the EIA, an analysis of each item follows:

- Cost/Cost Savings to vendors for the switch to non-plastic bags, straws, and containers. Look at aluminum, paper, cloth, fiber and other recyclable alternatives.
- Consider food types; are there effective container alternatives that handle red chile and other New Mexican foods?
- Additional cost/cost savings to customers for switching to non-plastic bags, straws, and containers. Effect on persons using SNAP/EBT?
- Is there a potential for food-borne illnesses being carried on cloth shopping bags?
- How will the policy affect transit dependent persons (use of plastic bags)?
- How will the ordinance reduce the amount of trash sent to City landfills?
- How many of the recyclable containers will ultimately be recycled by customers?
- Costs to Solid Waste Dept. for cleanup of plastic bags getting tangled in recycling equipment, including lost production time.
- Costs of cleaning up plastic items from the water system, rivers, arroyos, parks, etc.
- Future affect/cost on the environment and wildlife of continued use of these plastic goods.

**1) Cost/ Cost Savings to vendors for switching to non-plastic bags, straws and containers.**

The cost differential to vendors for switching from plastic products to other non-plastic items depends on many factors including the supplier used, purchase volume, existing supplier contracts, and type of alternative product used (paper, cloth, other biodegradables).

Plastic bags

Based on current costs from an online restaurant supplier, the cost of single use plastic bags is lower than the biodegradable film and paper bag options:

<u>Plastic</u> \$0.01249/ unit	<u>Biodegradable film</u> \$0.03298/ unit =\$0.02049 more per unit 264% of plastic cost	<u>Paper</u> \$0.065/ unit =\$0.05251 more per unit 520% of plastic cost
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Plastic Straws

Based on current costs from an online restaurant supplier and the costs to a local restaurant for hay straws, the cost of plastic straws is lower than the alternatives, except in the case that no straws are used (no cost):

<u>Plastic</u> \$0.0024/ unit	<u>Compostable Paper</u> \$0.0158/ unit =\$0.0134 more per unit 658% of plastic cost	<u>Hay</u> \$0.06/ unit =\$.0576 more per unit 2,500% of plastic cost
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Containers

Based on current costs from an online restaurant supplier, the cost of Styrofoam containers is lower than the alternatives:

<u>Styrofoam</u> \$0.08/ unit	<u>Biodegradable</u> \$0.18/ unit =\$0.10 more per unit 225% of Styrofoam cost	<u>Foil w/ cardboard lid</u> \$0.13/ unit =\$0.05 more per unit 163% of Styrofoam cost
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The recommended alternative container type to handle New Mexican foods, such as chile, enchiladas, and other soupy items are Fiber Clamshell containers. These fiber containers are sold by suppliers and wholesale chains like Sam’s Club, at a higher cost than Styrofoam.

<u>Styrofoam</u> \$0.08/ unit	<u>Fiber Clamshell</u> \$0.20/ unit =0.12 more per unit. 250% of Styrofoam cost
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**2) Cost/cost savings to customers for switching to non-plastic bags, straws, and containers and the effect of a plastic ban on persons using SNAP/EBT.**

The proposed Ordinance allows, but does not require businesses to charge up to \$0.10 per bag for the single-use plastic alternatives. It will be at the discretion of the businesses to enact such a fee, perhaps based on profitability, customer loyalty, and environmental considerations. Customers can also purchase reusable cloth bags at an average cost of about \$1.00 each. Shoppers in the U.S. use on average one plastic bag per resident, per day. Assuming businesses will charge the \$0.10 bag fee allowed by the proposed Ordinance, for family of four the annual additional costs would be approximately \$146.00 per year (4 residents x 365 days x \$0.10).

Other jurisdictions that have implemented similar plastic bag bans including Kirkland, WA, Lennox, MA, and Santa Fe, NM, require that customers participating in the Supplemental Food Program for Women, Infants, and Children (WIC) or the Supplemental Nutrition Assistance Program (SNAP) are exempt from the bag charge. Alamosa County, CA, allows individual stores decide whether to charge WIC or SNAP customers for the bags.

**3) Potential for food-borne illnesses to be carried on cloth shopping bags.**

An industry funded study commissioned found no harmful bacteria on the reusable bags tested. Other studies have shown that the bacteria found in reusable bags are also found on other common surfaces, but there was no evidence that reusable bags contain anything close to dangerous levels of bacteria. However, environmental experts warn that cloth shopping bags do have the potential for carrying food borne illnesses. Bags should be washed regularly to avoid illness. Bags that have had significant exposure to raw meats or ready-to-eat vegetables should be thrown away. Education will need to be provided to the public on safe use of cloth bags.

**4) How will the policy affect transit dependent persons (use of plastic bags)?**

In San Antonio, TX, and Boston, MA, there were concerns that a plastic bag ban would create a burden for people without a vehicle. The main worry is that transit dependent persons who need to feed large families, or double-bag their groceries to carry them on public transportation would be hardest hit by the bag fee. No formal studies or data on this subject are available.

**5) How will the ordinance reduce the amount of trash sent to City landfills? How many of the recyclable containers will ultimately be recycled by customers?**

For every ton of plastics produced, 75% will become plastic waste. Americans discard about 33.6 million tons of plastic per year, of this 6.5% is recycled, 7.8% is combusted in waste-to-energy facilities, and the rest, 85.7% ends up in landfills.

Plastics take anywhere from 500 to 1000 years to decompose, breaking down into tiny particles that contaminate the soil and water. Most plastic recycled can only be recycled once or twice. Recycling plastic only serves as a delay to it ending up in a landfill or being incinerated. One half of all plastic manufactured becomes waste within one year.

A study completed by the City of Austin , TX, in 2009 after a plastic bag ban was implemented there, found that the total number of plastic bags used was reduced by 197 million bags per year. The population of Austin at the time of the study was 786,386. Using Albuquerque's 2017 population of 558,545, the City's plastic bag use would be reduced by an estimated 140 million bags per year. Of that about 120 million, or 86% would ultimately end in the City's landfill.

An Albuquerque specific analysis by staff of the City of Albuquerque Solid Waste Department estimates an increase in the amount of trash going into the landfill as a result of a plastic bag ban. This analysis assumes that most businesses and residents will use paper bags as the preferred alternative to single-use plastic bags. It must be noted that paper trash decomposes at a much faster rate than plastics, within one month, and produces less contaminates. Paper bags are also recycled at a higher rate than plastic overall, or 60%.

(See Exhibit A- Landfill Space Saved)

<b>Paper versus Plastic</b>	<b>Bags Per Year</b>	
	Plastic	Replace with Brown Paper
Average number of grocery bags used per person (1)	306	306
Albuquerque population (2017)	558,545	558,545
Total bags used in Albuquerque	170,914,770	170,914,770
Weight each (ounces)	0.194	1.94
Total weight (tons)	1,036	10,362
Projected recycling (2)	0	6,217
Total tons landfilled	1,036	4,145
Increase (decrease) landfilled		<b>3,109</b>

(1) Based on Wall Street Journal report 100 billion plastic grocery bags used in US each year

(2) It is estimated that 60% of brown paper bags will be recycled

**6) Costs to Solid Waste Dept. for cleanup of plastic bags getting tangled in recycling equipment, including lost production time.**

The City’s recycling vendor does not track downtime at their facility by type of item causing the slow down or the shutdown of machinery, as there are several different contaminants that cause tangling and a stoppage of production. However, they do note that plastic bags are one of the main contributors to the tangling and slowing down of production.

**7) Costs of cleaning up plastic items from the water system, rivers, arroyos, parks, etc.**

Based on estimates provided by the Clean City crews of the City of Albuquerque Solid Waste Department doing clean up on the medians and highways and arroyos, the time spent on clean up attributed only to plastic bags is between ½ hour to 1 hour per day. That results in a cost to the City of \$3,900 per year. [Est. between ½ hour to 1 hour per day = 52 (weeks) x 5-hour (per week) =260 (hours) x \$15.00 = \$3,900.00 per year]. However, the work done by these crews is limited to those specific areas and by staffing and budgetary considerations, and does not include City Parks or other areas within the jurisdiction of other City departments or governmental agencies.

The City of San Francisco estimated the cost of clean-up and landfill at \$0.17 per bag. For the 50 million bags used in that City per year:

- Contamination of recycling stream: \$1.09 million/year = 2.2 cents per bag.
- Collecting and disposing of bags: \$3.6 million/year = 7.2 cents per bag.
- Removing bags from streets: \$2.6 million/year = 5.2 cents per bag.
- Processing in landfills: \$1.2 million/year = 2.4 cents per bag.
- Total cost per bag in SF alone: \$8.49 million/year = 17 cents per bag

Conservatively, about 20 million bags are not being disposed at landfills in Albuquerque per year (140 million bags x 14%). Using San Francisco’s estimate of clean-up costs, the City could avoid \$3.4 million in cleanup costs (20 million bags x \$0.17 per bag).

**8) Future affect/cost on the environment and wildlife of continued use of these plastic goods.**

There is an abundant amount of research on different aspects of the effects of plastic use on the environment and wildlife. Choosing which material is best for the environment depends on the type of environmental impacts that take priority. Plastic production and disposal overall results in less greenhouse gas emissions, energy, water and fertilizer inputs than the paper, aluminum, cotton or glass alternatives. However, improperly disposed plastic is a significant polluter of the environment, including wildlife, when not managed properly. This is especially prevalent in river and marine ecosystems.

Since most studies on the effects of plastics on wildlife focus on marine and ocean environments, there would need to be more study done locally to determine the effects on wildlife in Albuquerque, especially near the Rio Grande River and Bosque systems.

**EXHIBIT A :**

Landfill Space Saved  
*Jill Holbert, Albuquerque Solid Waste Department*  
*April 2019*

Is there a way to gauge/measure the reduction in the amount of trash that would be sent to City landfills under the new ordinance?

The ordinance, as written, may result in a direct 1:1 replacement of plastic grocery bags with paper grocery bags since there is no monetary incentive, such as a mandatory bag fee, to encourage the use of reusable bags. Because a paper grocery bag weighs 10 times more than a plastic one, and making an assumption that 60% of the paper bags will be recycled, using paper bags will actually make the amount of trash going to the landfill **increase** by over 3,000 tons per year. The assumption that 60% of paper bags will be recycled is based on some portion of them being contaminated with food which renders them non-recyclable, some portion replacing plastic grocery bags as trash can liners in the home, and some residents electing not to participate in the City’s voluntary curbside recycling program, which is available to all residential households. In FY18, a total of 531,407 tons were disposed of at the Cerro Colorado Landfill. The 3,109 additional tons would represent an increase of slightly more than one half of one percent.

The replacement of polystyrene foam takeout containers and cups would likely also result in more trash going to the landfill. Polystyrene foam is extremely light weight, but it is unclear exactly which containers would replace them. Therefore, it would be difficult to quantify the increase in the weight of trash heading for the landfill. It is assumed that none of the food containers would be recycled, because food contamination is prevalent in takeout containers which renders them non-recyclable. It is assumed that compostable containers would also end up in the landfill, as there is little opportunity for composting this type of waste in Albuquerque. The effect of replacing plastic straws with paper or compostable straws is deemed negligible to the landfill.

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