



CITY OF FAYETTEVILLE ARKANSAS

Single-Use Plastic Bag Analysis

August 2019

Overview

Litter associated with single use plastic bags is an issue of growing concern in Fayetteville, across the country, and around the world. Fayetteville City Sustainability Department Staff working with the Recycling and Trash Division and the Environmental Action Committee was tasked with conducting a peer city analysis and impact assessment of policy options to reduce the use of single use carryout bags with the goal of lessening their adverse environmental and litter impacts. For this analysis the term “carryout bag” means any single-use bag, paper or plastic, used to convey goods from a retailer. Single use plastic bags (SUPBs) are commonly defined as high-density polyethylene (HDPE) bags less than 2.25 mils in thickness designed to be used once. SUPBs typically cost the retailer 1-3 cents, while paper bags with handles and 40% post-consumer recycled content cost around 8-10 cents.¹

Background

The polyethylene used to make plastic bags was created by accident at a chemical plant in Northwich, England in 1933. The first one-piece polyethylene carryout bag was created in 1965 by the Swedish company Celloplast and it quickly came to replace cloth and paper bags in Europe. Plastic bags were widely introduced in the United States around 1979 after they had captured 80% of the carryout bag market in Europe. In 1982 Safeway and Kroger, then the two largest grocery store chains in the US, made the switch to plastic bags with more following suit. By the 1990's HDPE plastic bags had almost totally replaced paper bags in the U.S. and around the world.² At the time, the problems that we now associate with plastic bags; pollution, litter abatement cost, wildlife impacts, costs of production, production emissions, etc., were not considered.

National Issue

According to the website plasticbaglaws.org as of May 9, 2019 at least 414 local bag ordinances have been adopted in 27 states in the United States. California voters approved a uniform statewide plastic bag ban in 2016, and in April of 2019 New York State adopted a state-wide SUPB ban that will take effect

March 1, 2020. In general, SUPB bag laws that have been adopted across the country fall into one of three types:

- Bag Ban: a ban on thin plastic carryout bags only,
- Ban/Fee Hybrid: a ban on all thin plastic bags, and a fee for all other carryout bags, or
- Bag Fee: a fee mandated for all carryout bags regardless of type.

Thin film plastic bags became so popular so quickly because they were inexpensive to manufacture and convenient for customers and retailers. The Natural Resources Defense Council estimates that the average American family takes home almost 1,500 plastic carryout bags a year.³ The New South Wales Environment Protection Agency estimates that the mean life span of a single use plastic bag at 12 minutes.⁴

A major problem with SUPB is the low recycling rate. According to the U.S. Environmental Protection Agency the recovery rate for all plastic bags, sacks, and wraps combined was 12.3% in 2014. This data is based on predictive modeling, and are not measured, making the information prone to errors. Studies in Illinois and California estimate plastic bag recycling at 1.5% and 3% respectively.

There are reasons for the low recycling rate for plastic bags. First, typically only the larger retailers take back plastic bags for recycling. Second, municipal recycling collection rarely collects plastic bags because they tend to contaminate other recycling commodities and clog up machinery. Third, the economic cost of collecting, segregating, recovering, bailing and transporting the bags is not recovered from their sale in the commodities marketplace.

The Problem with Plastic Bags in Fayetteville

The City of Fayetteville and concerned community volunteers spend a significant amount of time picking up litter from along city streets, trails, parks and streams. The City's Recycling and Trash Division works with Keep America Beautiful to utilize volunteers for litter clean-up events, primarily along city streets. In the last four years the volunteer labor used to pick up litter from city streets and rights-of-way amounted to 8,458 hours for an estimated dollar value of \$180,674.

The Parks and Recreation Department also uses volunteers to pick up litter in the City's parklands, along trail corridors and from our urban streams. Data from Parks and Recreation indicates that over the time-period of 2015-2018 there were a total of 22,290 hours of volunteer labor estimated at a value of \$545,971. Combined, the volunteer labor used to pick up litter from City rights-of-way, parks, trails and streams over the last four years (2015-2018) is the equivalent of \$726,645.

A 2014 Town Branch waste audit found that plastic followed by Styrofoam were the most common types of trash that volunteers collected, making up 26% of the total waste by volume.

Plastic bag usage data is sparse because most retailers will not release this information due to confidentiality or because they do not track it. However, in 2015 the U.S. International Trade Commission estimated the national consumption of rate SUPB's at 319.5 per person annually.⁵ The US Census Bureau estimates Fayetteville's population at 86,751 in 2018. This equates to approximately 27,716,944 SUPB's consumed annually in the Fayetteville community.

Policy Options and Approach

Research from peer cities and states that regulate the use of carryout bags was used to understand successful best practices and unintended consequences of various bag laws. Early carryout bag regulations were primarily instituted as bans on single use plastic bags. These regulations had the unintended consequence of retailers and consumers switching to a paper alternative that has significantly higher life cycle costs than the plastic option. More recently, cities are mandating a bag fee to modify consumer behavior instead of placing bans on single use plastic bags. This is often politically more acceptable, and if the fee is substantial enough it has been shown to be effective.

Staff assessed the following options for addressing single use carryout bags:

- Option 1 – status quo with no regulation of single use carryout bags.
- Option 2 – a ban on single use plastic carryout bags.
- Option 3 – a ban on single use plastic carryout bags, with a fee on all other carryout bags.
- Option 4 – a fee on all carryout bags with all money collected going back to the retailer.
- Option 5 – a fee on all carryout bags with a portion of the fee covering the retailers cost and the remainder being allocated for community benefit.

The status quo option is included because as the community continues to grow and add population the pollution from SUPB's will continue to increase. Option 2, the ban on SUPB's, was considered for the purposes of this analysis but is not recommended due to unintended consequences of retailers and consumers switching to more lifecycle intensive options – generally paper bags or thicker plastic bags. Option 3 that bans SUPB and charges a fee on other carryout bags is based on the California State model approved by voters. Option 4, a variation where SUPB's and other alternatives are available for a fee with the entire fee going back to the retailer, is generally considered the safest option to withstand legal challenge. Option 5 is most commonly designed where a fee is assessed with a portion going to the retailer and a portion going back to the City. This policy option has been held as an unconstitutional tax in the state of Texas. For the purposes of this analysis staff is not providing a legal opinion on which policy may withstand legal challenge, but merely pointing out examples of legal precedent from peer cities and states. The City Council should defer to the City Attorney on the constitutionality or legality of any of the presented options.

Efficacy of Plastic Bag Laws

Plastic bag laws have greatly improved in effectiveness since the first municipal plastic bag law was implemented in San Francisco in 2007. San Francisco's early bag ban proved to be ineffective because retailers just switched to offering paper bags or heavy HDPE plastic bags. More recent laws have largely been designed around the ban/fee or simple fee concept to influence consumer behavior, and many of these plastic bag laws have been shown to be effective. In March of 2019 the Scientist Action and Advocacy Network and PlasticBagLaws.org compiled a comprehensive spreadsheet of plastic bag law effectiveness data gathered from multiple municipalities, located here: https://scaan.net/plastic_US/ Some notable results include:

- San Jose, CA: a 2016 Santa Clara Countywide Storm Drain Trash Monitoring and Characterization Project observed a 72% decrease in the number of bags found in storm drain inlets compared to before a carryout bag fee was implemented.⁶

- Boulder, Colorado: saw a 70% decrease in plastic bag use immediately following the implementation of a bag fee in 2013.⁷
- Washington, DC saw a 60% reduction in single use carryout bag consumption in the first year.
- Chicago, IL has a 7-cent tax on all carryout bags and experienced a carryout bag reduction of 42% in the first month after the passage of the regulation.

Equity of Plastic Bag Laws

Many peer cities that have implemented a fee-based carryout bag regulation have developed approaches for providing low-income residents with assistance to offset increased grocery costs. Typically, the SUPB ordinance will exempt individuals that are receiving Supplemental Nutrition Assistance Program (SNAP) benefits or Supplemental Nutrition Program for Women, Infants, and Children (WIC) assistance. This is widely considered a best practice when instituting a fee-based regulation. Some cities also use a portion of the fee collected to subsidize or give away re-usable bags to low income residents.

Policy Options Matrix

Policy Goal	Impact Category	Policy Option 1 - Status quo	Policy Option 2 - Ban on SUPG	Policy Option 3 - Ban on SUPB and fee on other carryout bags	Policy Option 4 - Fee on all carryout bags with proceeds returned to retailer	Policy Option 5 - Fee on all carryout bags with a portion of the fee covering the retailers cost and the remainder being allocated for community benefit
Environmental Benefit	Litter abatement	Very Negative	Very Positive	Very Positive	Positive	Positive
Lifecycle Benefit	Cost of the material over its useful life	Neutral	Very Negative	Negative	Very Positive	Very Positive
Education and Outreach	Expand awareness of SUPB	Neutral	Positive	Positive	Positive	Very Positive
Political Feasibility	Likelihood of support of community	Neutral	Neutral	Positive	Neutral	Very Positive
Financial Feasibility	Impact on City budget	Negative	Neutral	Neutral	Neutral	Neutral
Operation Feasibility	Impact on City time and resources for management	Neutral	Neutral	Neutral	Neutral	Negative
Enforcement Feasibility	Costs of compliance	Neutral	Negative	Negative	Negative	Very Negative
Equity*	Financial assistance or credits	Neutral	Negative	Neutral	Neutral	Neutral
Economic Impact	Financial impact on Businesses	Neutral	Negative	Neutral	Very Positive	Positive
Replicable Ordinance	Ease of Implementation and Minimization of Legal Exposure	Neutral	Negative	Neutral	Positive	Neutral

Policy Option 1 - Status quo

This policy option maintains the current condition with no changes. In a status quo scenario environmental degradation will continue to accelerate as the population increases. This can negatively impact the City’s litter abatement efforts and budgetary resources. The impact for the other policy goals is presumed neutral in every category for this option. This policy option does not require additional action from the City, and there are no perceived costs or benefits for the City or its’ budget.

Policy Option 2 - Ban on single use plastic bags

San Francisco enacted the first ordinance banning SUPG's in 2007. One of the unintended consequences was that retailers just switched over to paper or a thicker mil "reusable" plastic bag (typically >2.25 mils) and consumer behavior did not change. Subsequent ordinances by peer cities typically have opted for SUPG bans with a fee for all other carryout bags. A SUPB ban without a fee for other carryout bags is likely more environmentally detrimental due to the lifecycle costs for sourcing and manufacturing paper bags. A SUPB ban would be very positive in terms of creating awareness in the community for the environmental costs of plastic bags, however without a fee for other carryout bags, this benefit would be offset by the increased lifecycle costs of alternative carryout bags. The community support for this option rates high with 60% of respondents saying that they would support a plastic bag ban or fee of 10 cent per bag, with another 10% supporting the fee if it were only 5 cents per bag, however the unintended consequences in terms of the alternative products lifecycle costs may not be well understood by the public. The impacts on City budget and operational resources is neutral however, enforcement feasibility is negative because depending on how the ban is implemented it would require an identified but unknown amount of staff time to ensure compliance. The economic impact of a SUPB ban is assessed negatively because retailers usually just switch from a 3-cent plastic bag to a more expensive carryout bag alternative and absorb this cost by passing it on to the consumer. Assuming the increased costs of alternative carryout bags are passed on to the consumer, a SUPB ban would not be equitable for low-income residents. SUPB bans are not widely adopted or replicated due to the identified unintended consequences and legal challenges.

Policy Option 3 - Ban on single use plastic bags and a fee on all other carryout bags

This approach is commonly called the "hybrid" model and it mirrors the recent California Statewide ban on thin plastic bags (<2.25 mils) and a minimum 10 cent fee on alternative carryout bags (paper and plastic >2.25 mils). The fee generally goes back to the retailer and the City has very little operational involvement other than providing any necessary compliance or enforcement support. These hybrid ordinances are highly effective in reducing the amount of SUPB litter in the environment. To be effective the fee for the alternative carryout bag, typically paper or a heavier mill plastic, must be significant enough, a minimum of 10 cents, to influence consumer behavior and prompt people to remember their reusable bag. Many cities track bag usage initially to gauge effectiveness and then may revisit the issue to adjust the price of the alternative carryout bag fee appropriately. This policy option would require some education and outreach on the lifecycle costs of the alternative bags offered for the fee by the retailer. This option would be neutral for equity considerations so long as SNAP and WIC recipients were exempted from the fee. The financial impact on business would be neutral so long as the fee is set at a minimum that covers the retailers cost of providing alternative carryout bags. Fees should also be set at a minimum instead of a flat fee so that retailers have the option to provide various types of carryout bags at different price points. Legal exposure with this option is unknown, however because it would ban SUPB's it would have the potential to invite legislative intervention.

Policy Option 4 – Fee on all carryout bags with proceeds returned to retailer

This option is widely considered the best practice in SUPB ordinances because it has withstood the legal challenge of "unconstitutional taxation" in California since the entire amount of the fee must stay with the retailer. The case stemmed from the County of Los Angeles SUPB fee ordinance. Critics of the ordinance labeled the law as "grocers getting rich." However, given the retailers cost of providing paper bags (8-10 cents), retailers should generally be made whole for any costs that they incur. This option will

be positive for the environment, however, since SUPB's will be available for use with a fee it would not be as positive as option 3 – SUPB ban with a fee. Data indicates that if the carryout bag fee is significant enough it will impact behavior and encourage the use of reusable carryout bags reducing the overall lifecycle costs incurred from single use plastic and paper bags. It would have positive impact on education and outreach partially because paying a fee would be a significant change for the consumer at the point of sale. Public support of this option will likely not be as widespread as some of the other options considered, as it may be viewed as benefiting the retailer. City government operational resources and budget would not be impacted. There would be an enforcement cost for the City which is acknowledged but unknown in scope. Equity impacts are neutral if WIC and SNAP benefits are exempted. The economic impact for businesses would be very positive. This policy option is being widely adopted by municipalities across the country because of the legal precedent set in California.

Policy Option 5 – Fee on all carryout bags with a portion of the fee covering the retailers cost and the remainder being allocated for community benefit.

This option is normally set-up so that the fee is split between the retailer and the municipal government. The retailer is typically made whole for the cost of their carryout bags and the remainder is returned in some way to the local government or the community for advancing recycling efforts. This option is used by Chicago, IL and Washington, DC. The Chicago law specifically states that the fee is a “tax” and is collected as such. Washington, DC’s ordinance charges 5 cents per bag, with a cent going to the retailer and 4 cents going to the District to fund clean-up efforts on the Anacostia River. Washington, DC’s ordinance is permitted because the District is not a State and operates independently. Like option 4, this option would be positive for the environment and very positive for lifecycle benefits and education and outreach efforts. This policy option is typically supported in the community because of the perceived fairness of including a community benefit component. Depending on how the fee structure is developed and administered there may be a need for additional operational capacity from the City in order to implement. Additionally, ensuring compliance would require an identified but unknown level of enforcement. The ordinance would be neutral for equity considerations if WIC and SNAP beneficiaries are exempted from the fee. The economic impact on the retailer could be neutral to positive depending on how the fee is proportioned and utilized. Legal exposure is dependent upon how this option is developed and implemented, therefore, legal exposure, ease of implementation and replicability of the ordinance for peer communities should be given utmost consideration.

Common Ordinance Provisions

Most recent SUPB laws contain common elements that have been refined over time from learned experience and legal challenges. The following issues should be considered during the drafting and development of an ordinance:

- *Applicability:* Ordinances commonly apply to specific retail segments that are clearly defined (grocery stores, drug stores, convenience food stores). Additionally, they may specify a minimum square footage, minimum gross annual sales, or may be tied to a specific State required operating license such as an Alcohol and Beverage Control license.
- *Definitions:* All terms are clearly defined. Special attention should be paid to ensure that there is no ambiguity regarding the different types, weight, materials and recycled content of carryout bags regulated under the ordinance.

- *WIC and SNAP exemption:* Exemptions for WIC and SNAP beneficiaries is considered a best practice when regulating SUPB.
- *Fees:* How and where the fee is collected and distributed will be dependent on the policy option that is selected.
- *Compliance and enforcement:* The ordinance should set-up remittance of fee procedures, if necessary, and outline how compliance will be enforced.
- *Phase in time-period:* Ordinances are usually set for implementation at a future date to give retailers ample time to prepare. Depending on the policy option this may include; reducing existing bag stock, finding alternative product and suppliers, and changing point of sale procedures.
- *Requirement for reusable bag sales at check-out.* Most ordinance require retailers to offer reusable bags for sale at check-out. Under Option 4, where the retailer keeps the bag fee, it may be a useful marketing tool for the retailer to give away or sell at a discount reusable bags from the proceeds of the fee collected.
- *Reporting of bag usage by type from retailers on a regular basis.* Ordinances that require a bag fee will typically require retailers to report back to the City on the number of bags used of each type, total amount of monies collected, and a summary of any efforts a store has undertaken to promote the use of reusable bags. This metric should be integral to whichever option is selected to measure efficacy and track reductions in single use carryout bag usage over time.

City Staff Impacts

The five policy options presented will require varying levels of City staff support to implement and operate.

- *Option 1: Status quo,* would require no change.
- *Option 2: Ban on SUPB's,* may require minimal compliance and enforcement staff time.
- *Option 3: Ban on SUPB and fee on others,* would require the retailer to periodically report the number of bags used and the fees collected to track usage over time. City staff in the Recycling or Sustainability Departments would need to collect, compile and analyze this data on an ongoing basis.
- *Option 4: Fee on all carryout bags going back to the retailer,* would require the retailer to periodically report the number of bags used and fees collected to track usage over time. City staff in the Recycling or Sustainability Departments would need to collect, compile and analyze this data on an ongoing basis.
- *Option 5: Fee on all carryout bags with a portion of the fee covering the retailers cost and the remainder being allocated for community benefit.* Depending on how this option is designed it may have an operational impact on City resources. For example, if there is a remittance of a portion of the fee back to the City it would require additional support in the Accounting Department to collect and process this from the retailer. An initial estimate based on the staff time used to process HMR taxes estimates this operational expense as 0.58 Full Time Employee (FTE) per 240 accounts. However, there are additional ways that a community benefit could be quantified without the City collecting a portion of the fee. Alternative ways to achieve a community benefit would need to be explored further during the development of a legally defensible ordinance.

Survey Results

The City developed an online residential survey and a business survey to gauge the communities interest in pursuing plastic bag and/or Styrofoam legislation. The survey was located on the Speakup Fayetteville website and it was distributed through various on-line and traditional means including; business license email contacts, digital media, print media, television, radio and word of mouth. The Resident and Visitor Survey had 2,167 responses with and the Business Survey had 154 responses. Both surveys went live on July 7th and were closed on August 22nd.

The Resident and Visitor Survey was comprised of questions about plastic bag usage, attitudes regarding Styrofoam and demographic questions for better understanding of the sample. The following is a brief synopsis of some of the takeaways from the resident and visitor survey:

- 96% of respondents support reducing litter in Fayetteville's streams and waterways, as well as reducing trash that goes to landfills.
- 53% say that they always or most of the time bring reusable bags to the grocery store.
- When asked what prevents you from using reusable shopping bags? - 71% of respondents say that they forget to bring their reusable bag to the grocery store, 22% say they want SUPB for other uses, 16% say they always bring a reusable bag, 11% say reusable bags are too expensive, 5% prefer SUPB's and 3% are unsure.
- When asked how would a disposable bag fee influence your behavior? - 48% say they would bring a reusable bag more often, 19% say on effect they already bring a reusable bag, 20% say that they would shop in another city, 9% say they would use fewer SUPB's at checkout and 4% say that they would pay the fee and use the same number of bags.
- When asked if they would support a plastic bag ban or fee (5-10 cents for each bag used)? - 60% say they would support, 10% would support a 5-cent fee but not a 10-cent fee, 5% are unsure and 25% would oppose a SUPB ban or fee.
- When asked if they would support or oppose a ban on Styrofoam? - 74% support, 20% oppose and 6% are unsure.
- When asked if they would support or oppose a ban on plastic straws, stir sticks and other forms of single-use disposable plastic items? - 62% support, 28% oppose and 10% are unsure.
- The Ward distribution of survey respondents was generally representative: 16% Ward 1, 17% Ward 2, 14% Ward 3, 20% Ward 4, 19% outside of City and 14% unsure of Ward.
- The education and income level of survey respondents was slightly higher that the Census demographics indicates for the City as a whole.
- The age distribution in the survey is generally representative: 1% under 18 years of age, 35% between 18 and 29, 24% between 30 and 39, 16% between 40 and 49, 11% between 50 and 59, 9% between 60 and 69, and 4% over 70 years old.

The business survey was also advertised through various on-line and traditional media sources. Additionally, a link was sent by email from the City's Business License Registry to over 400 retailers that could be potentially impacted by a SUPB ordinance, and 600 restaurants that could be impacted by a ban on Styrofoam to-go containers.

Some of the key take-aways from the business survey include:

- Only 2% of businesses say that they offer a discount or other incentive for customers bringing their own reusable bags, 2% also say that they charge a bag fee at checkout.
- 8% report having a take-back program for SUPB's.
- When asked what policies that they would support to help the community reduce litter and waste generated from SUPB's, respondents could choose any, or all, of the following: 67% support additional drop-off locations for SUBB recycling, 54% support greater customer access to reusable bags, 43% support a city-wide ban on SUBB's, 32% support a fee on SUPB's and 13% had other ideas/suggestions.
- Grocery and specialty food store operators self-identified as 13% of respondents.

Recommendation

The Keep Fayetteville Beautiful Committee met on August 15, 2019 to discuss the City Council's proposal to look at policy options for single-use plastic bags and Styrofoam. Following the discussion, the Committee members voted unanimously to support the City Council's development of ordinances that would regulate single-use plastics in the city. Staff also presented this analysis to the Environmental Action Committee on Monday August 19, 2019. The Environmental Action Committee recommended against Policy Option 2 – a SUPB ban, due to the unintended environmental and lifecycle costs associated with this option. The Environmental Action Committee recommended Policy Options 3, 4, or 5 or a combination thereof. City Staff is also in support of Policy Options 3, 4 or 5.

Bibliography

1. http://publicfiles.surfrider.org/Plastics/Plastic_Bag_Law_Activist_Toolkit_2019.pdf
2. <https://www.unenvironment.org/news-and-stories/story/birth-ban-history-plastic-shopping-bag>
3. <https://www.nrdc.org/media/2008/080109>
4. <https://www.epa.nsw.gov.au/~media/EPA/Corporate%20Site/resources/waste/160143-plastic-shopping-bags-options.ashx>
5. https://www.usitc.gov/publications/701_731/pub4605.pdf
6. https://static1.squarespace.com/static/54d3a62be4b068e9347ca880/t/5a3aa28171c10b949c1632f8/1513792136710/Santa+Clara+County_Storm+Drain+Trash+Monitoring.pdf
7. <https://bouldercolorado.gov/zero-waste/disposable-bag-fee>