

Delta Plastic Bag Ban

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Nature of the Issue

Ever since plastic bags were invented in the 1960's, they have been a growing and constant problem for our environment. It takes 100 and 1000 years for some bags to degrade, according to a study done by UBC, meaning that the first plastic bags produced are still on earth, if they were not recycled. While plastic bags can be recycled, they usually end up in landfills, where they cannot degrade without oxygen which is lost since layers of trash are piled on top of it. If they are not recycled, they can end up in the ocean or just littered on land. SEE Turtles, an organization dedicated to saving sea turtles and other ocean life, found that more than one million seabirds die each year from ocean pollution. The trash and plastic ending up in the ocean also poses threats to fish, coral reefs and other marine life.

We believe that plastic bags are a big problem in Delta. Based on a report published by the vancouver landfill, which is located in Delta, 4.2 tonnes (9360 lbs) of plastic bags were apart of the garbage in 2017. All these environmental issues could affect our lives and the future around us. We often see bags lying around on the streets or being left in the garbage instead of being properly recycled. This needs to change soon. We think the best way to do this would be to have people using reusable bags and trying to put an end to plastic bags at the local level.

History of the Issue

In recent years it has become apparent that plastic bags have become a global problem. With the resources it costs to produce them and the pollution they create, many cities and even some countries have begun to ban plastic bags. In 2002, Bangladesh became the first country to ban plastic bags. Slowly other countries and cities have begun to follow suite. Canada has yet to do this. Certain cities in Canada, such as Victoria and Montreal have banned plastic bags. Toronto also tried to ban plastic bags but due to a large backlash from the Ontario Convenience Store Association, they were forced to end the ban before it could even begin. Awareness of the harmful consequences of plastic bags has already been raised, but the

videos and campaigns that have circulated social media have not been enough to really stop the use of plastic bags.

Most grocery stores have made an effort to discourage the usage of plastic bags by charging roughly \$0.10 per plastic bag. Stores also sell reusable bags for around \$1.00 to \$3.00. These two actions are helping reduce the issue, but seem to have lost their power since they were first introduced.

In Delta specifically, there has not been much action taken upon the issue of plastic bags. Many campaigns have been circulated on social media before, but these campaigns seem to die out and lose their effect on people within a short period of time. Campaigns such as #BringYourBag have been circulated around the lower mainland, but have not gotten as much acknowledgment as they should have.

Groups Involved

There are currently many different groups involved in helping the environment and limiting or even banning the plastic bag usage in Canada and even on a more global scale. There are groups such as Recycle B.C. that are working on reducing plastic bag usage through the #BringYourBag campaign, which challenges people to reduce their plastic bag usage. This seems to be one of the only B.C. wide groups that has created a specific campaign for this issue. Despite approximately 150 million bags being used in B.C. each year, no other large groups are working on this issue.

The plastic industry is also a large stakeholder in this issue as different companies supply approximately 3 billion plastic grocery bags a year to Canada. This would mean they are losing an amount of profit from Canada that could have an effect on their business.

There is also the stores who use plastic bags that would need to adjust to finding new suppliers of reusable bags and ending ties with their current suppliers of plastic bags. Approximately 4,248,400 are used in Delta alone each year. We figured this out by calling many different grocery stores and asking whether they used and sold plastic bags as well as whether they sold reusable bags. This amount is small compared to what bigger cities go through every year but still contributes to the problem.

Consumers also play a big part in this issue. These are the shoppers who would need to adjust to the idea of no longer using plastic bags, so it is important to know what they think about the issue. We conducted a survey of 630 people around Delta and Surrey. When asking how many bags people used we found the majority of people used 1 to 3 bags while shopping. We also found that 40% of people throw their plastic bags in the garbage leaving them to take up unnecessary space in landfills and with no way to degrade, due to a lack of oxygen and sunlight. This is shown in Figure 1 and Figure 2. Shoppers would have to adjust to no longer using plastic bags, after decades of plastic bags being the status quo.

Perspectives

Through our research and survey results, as well as talking to individuals within the community, we have gathered that many people have different levels of understanding regarding the plastic bag problem in Delta, as well as different experiences, thus creating a variety of perspectives. From a survey we conducted, 82.6% of participants said that they were open to using reusable bags for grocery shopping as shown in Figure 3. These results suggest that reusable bags are a viable option for a solution, and that the community is open to change.

Furthermore, banning plastic bags in Delta is a step in the right direction to producing zero waste. All species are a part a cycle and interact with other species to create net zero waste; all waste produced by one species can be a resource for another species. Humans used to be a part of this type of living, however, due to progression and overpopulation, we have broken from the cycle, and are producing too much waste, hence global warming and other environmental disasters plaguing the world. It is our job to care for the planet, and banning plastic bags would reduce the waste in Delta, taking us one step closer to zero waste.

Moreover, the Canadian Plastics Industry Association opposes plastic bag bans because banning plastic bags would reduce the money they earn and lowering the number of consumers. In fact, Toronto attempted to have a plastic bag ban, however, the bylaw was denied by a vote of 38 to 7 and the CPIA called this a “successfully overturned” bylaw. CPIA argues that plastic bags are beneficial for collecting organics and separating organics from the landfill. Furthermore, CPIA uses the argument that reusable bags are not the best choice for sanitary reasons, they raise the point that not everyone is able to wash their reusable bags. We commend that this a viable risk, however, our goal is to only ban single-use plastic grocery bags, therefore, bags used for compost and for separating vegetables and meats will not be banned, meaning that the sanitary issue will not be a problem.

Victoria council commended that plastic bags needed to be banned, and according to *CBC News*, as of July 1, 2018, Victoria no longer allows grocery stores to sell nor give out plastic checkout bags. *CBC News* reports that this ban was brought on by a convincing argument from a passionate citizen in May 2016. However, the Canadian Plastic Bag Association, (CPBA), brought the approval to the BC Supreme Court to rebuke Victoria council’s authority to execute the bylaw. The association claimed, in accordance to *CBC News*, that the Victoria council should have no right to prevent grocery stores from selling or giving out plastic bags. However, Victoria has the right to control other selling items such as wildflowers. Why should it be different for plastic bags? It is likely that the CPBA will challenge Delta’s

proposal for a plastic bag ban. However, Victoria was successful in banning plastic bags, along with Montréal, indicating that Delta can be successful as well.

Possible Solutions

There are three main solutions to the plastic bag problem around the planet. These three solutions are paper bags, reusable bags, and biodegradable or compostable bags. Each of these solutions come with its own set of issues that must be worked around, but most seem like a step in the right direction away from plastic bags.

Paper Bags

There is a common misconception that paper bags are better for the environment than plastic bags. However, this is untrue. It requires equal or more amounts of energy to recycle paper bags as opposed to plastic. Creating paper bags is also much worse for the environment overall than making cloth or plastic bags. They create over 70x more air pollution and also more water pollution than plastic bags. This pollution comes through CO₂ nitrogen and phosphorus that can leak into water systems and create environmental dead zones. Paper bags also cost between four and five cents to make which is more than the average of one penny to make a plastic bag. They also cost more to ship from the manufacturers to the suppliers as the bags themselves take up more room in containers so not as many can be shipped at once.

Biodegradable and Compostable Bags

A solution to plastic bag waste is degradable bags. In reference to Bag to Earth, there are two main types of degradable bags: compostable bags and biodegradable bags.

Compostable bags are composed of cellulose which is a plant-based molecule that allows the plastic to degrade naturally. However, compostable bags should only be used for lining compostable organics because if they were to be disposed of in the landfill they will produce methane, a toxic gas, instead of CO₂ and water.

Another type of degradable bags is biodegradable bags. As described by *Breakdown Plastic* the most common biodegradable bags are plastics that have additives that help break down the carbon within the plastic allowing micro-organisms, algae, and fungi to eat it, which allows it to decompose. However, biodegradable bags need sunlight and oxygen to degrade for the micro-organisms, to eat. If these bags are

thrown into the landfill, they will most likely be covered up, therefore, no access to oxygen or sunlight. Meaning, they will produce methane gas and/or not degrade enough for the microorganisms to eat.

Another problem with biodegradable bags is that they cost a lot of money to produce, according to various resources, biodegradable bags can cost anywhere from 3-10 times more than a regular plastic bag. Furthermore, as mentioned by *European Plastics Converters*, people believe that biodegradable bags are close enough to 100% degradable, and as a result are less concerned with recycling these bags. Since people are less concerned about recycling biodegradable bags, they will most likely not realize that these bags need to be recycled as well. In conclusion, biodegradable bags are a good option for reducing the consequences of plastic waste, however, they are not the solution that we need in order to clear our city/province of the consequences of plastic.

Reusable Bags

We believe that reusable bags are the best solution to the plastic bag problem. There are four key factors in the debate of plastic bag vs. reusable bag; impact on the environment, cost, convenience for shoppers, and the effect on stores.

Reusable bags may actually have a larger environmental impact in the production process, than plastic bags. Bags made from natural fabrics like cotton tend to have the largest environmental impacts, due to cotton and other plants being very water intensive, and reliant on pesticides. The environmental impact of a reusable bag all comes down to how many times it is reused, and different materials require a different number of reuses to reduce environmental impact as shown in Figure 5.

Single-use plastic bags seem cheaper than reusable bags at first. According to a report from the New York Times, single-use plastic bags cost less than a penny to produce. A non-woven reusable bag, can cost between \$0.10 and \$0.25 to produce. These bags sell for \$1.00 to \$3.00 at grocery stores and do not have as many hidden costs, as people do not tend to throw reusable bags away. Reusable bags have higher shipping costs due to size and weight, and most of them come from overseas. However, if everyone used reusable bags, there would eventually be lower demand, so fewer bags would need to be shipped. Strictly from a cost standpoint, reusable bags are more cost-effective. We conducted a survey of roughly 570 people around Delta and Surrey and found that most people do have reusable bags, yet they do not use them, as shown as in Figure 4.

94% of people we surveyed said that they have a reusable bag at home, yet when asked how many plastic bags they use, the numbers were quite different as shown in Figure 1.

Despite almost everyone saying they have a reusable bag, only a quarter of the people surveyed answered that they do not use plastic bags. If plastic bags were to be banned, we believe that people would get used to leaving reusable bags in their cars or in their day-to-day bags.

Lastly, reusable bags will also affect the grocery stores that are selling them. Plastic bags are used by stores because they are cheap and are often branded to act as an advertisement when carried around. Reusable bags can also be printed to have a store's logo on it, which will serve as an advertisement, like a plastic bag. In addition, reusable bags can be used for a multitude of purposes as well as used multiple times.

We believe that reusable bags are the best solution to the plastic bag issue. Non-woven polypropylene varieties only need to be reused 11 times to have less of a negative environmental impact than single-use plastic bags. Most households in Delta already have reusable bags that could easily be used for groceries, it is just a matter of getting people to use those bags. A simple public advertisement or posters outside of grocery stores could be enough to remind people to bring their reusable bags and use them as many times as possible. Reusable bags may not be the perfect solution, but out of our proposed solutions, they are the best option.

Challenges and Obstacles

Many difficulties and obstacles in our path come from the cost it would require to change the grocery bag system in Delta. There is also the fact that many people are not willing to change or accept what is slightly more inconvenient despite the obvious benefits for the environment.

A large factor playing into this issue is the cost of turning away from plastic grocery bags. We were unsuccessful in finding an exact cost for plastic bags and reusable bags, but we were able to come up with estimates, listed in the chart below.

	Plastic Bags	Reusable Bags
Production Cost	\$0.01	\$0.18
Cost-Price	\$0.03	\$0.54
Retail Price	\$0.10	\$2.00
Overall Profit for Stores (per bag)	\$0.07	\$1.46

While reusable bags cost more, they also yield a much larger profit than plastic bags. On the contrary, less reusable bags are sold than plastic grocery bags, so that also needs to be taken into account from a profit standpoint.

The main opponent to the plastic bag ban we are proposing is the Canadian Plastics Industry Association (CPIA) and the Canadian Plastic Bag Association (CPBA). The associations have had experience in challenging plastic bag bans in Canada with Victoria and Montréal. According to *CHEK News*, when Victoria posed the bylaw for banning plastic bags, the CPBA created a petition to overrule them. An argument from these associations that we have not addressed is that plastics bags are beneficial for separating recyclables and organics and *encourages* people to recycle and compost. We are planning to ban only grocery checkout bags, therefore, plastic bags that separate garbage, organics and recyclables are not affected. Another argument is that plastic bags are recycled so that manufacturers can reuse them to make other plastic products such as furniture. This may be true, however, it is evident from the landfill and the environment around us that many people do *not* recycle their plastic bags. Therefore, the banning plastic bags is the logical decision as it would affect the poor distribution of the majority of plastic bags.

Finally, the associations raise the point that plastic bags are affordable, convenient and hygienic. Plastic bags are more hygienic, however, plastic bags used to separate vegetables, meat, fruit and similar will not be banned; meaning that the hygienic issue will not be a factor. As for plastic bags being more affordable, it is true, yet with reusable bags they can be reused a multitude of times, and not only for grocery shopping. The amount of times that we expect the average person to use a reusable bag will reduce its value of expense.

Conclusion

Ultimately, we want to ban plastic bags to reduce plastic waste in the environment to better our future. We believe that the best solution is using reusable bags. We understand that there are many obstacles and difficulties, but we are prepared to face these challenges. We have talked to the Delta community, the Victoria government and other sources to determine the best choice of action. We only want to ban plastic grocery bags, reducing the amount of problems to face. We commend that humans have become very reliant on plastic bags, therefore, we only want to take a small step in banning them. We believe a small step to a greener future is better than no steps at all.

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Figure 1

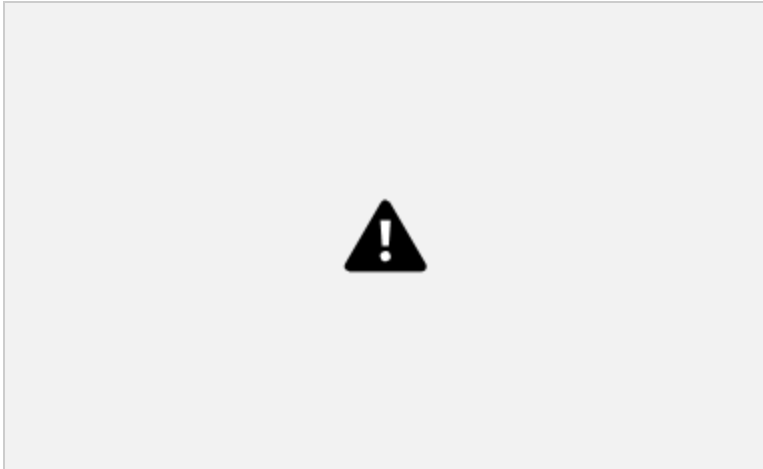


Figure 2

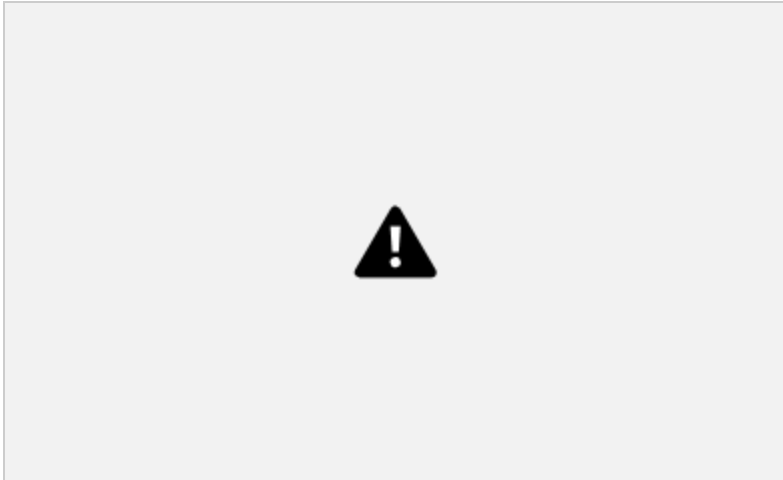


Figure 3

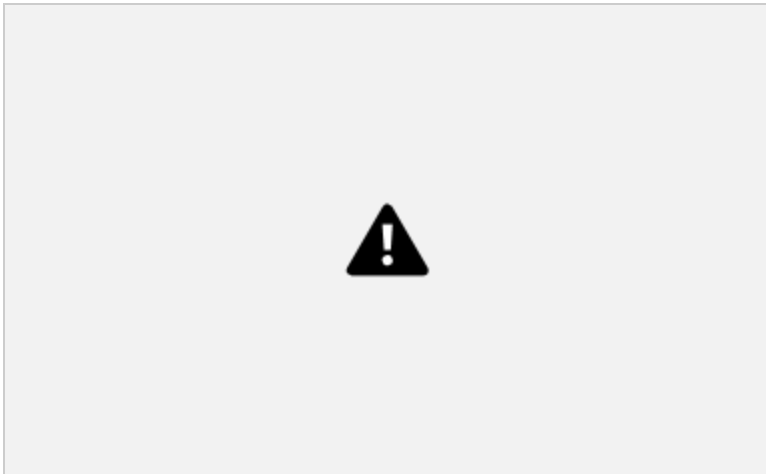


Figure 4

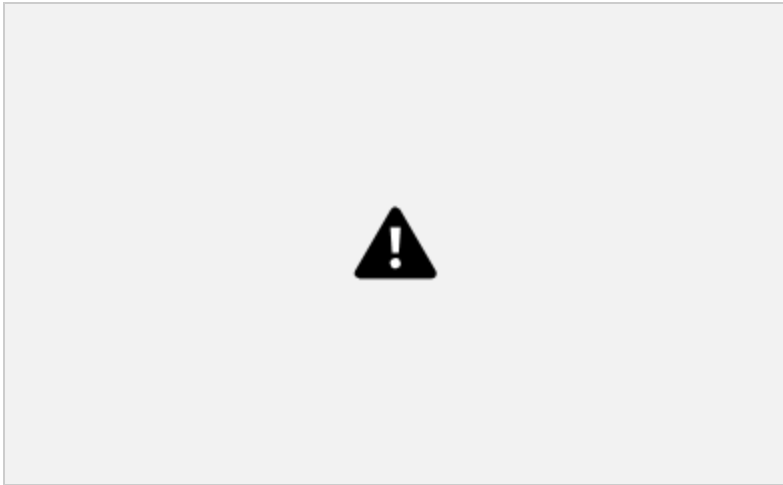


Figure 5

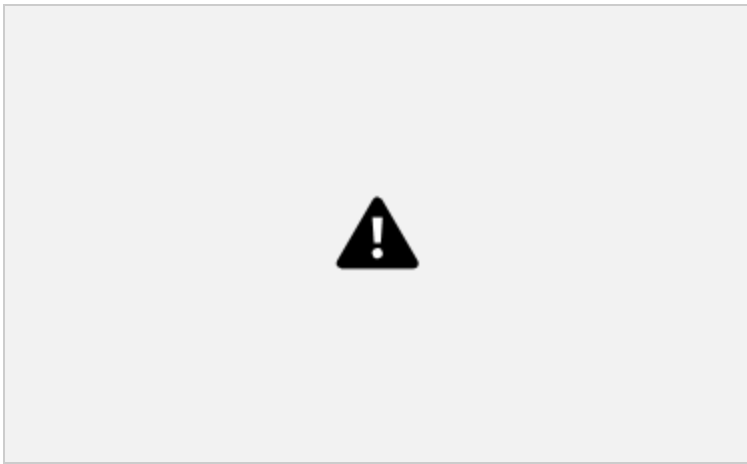
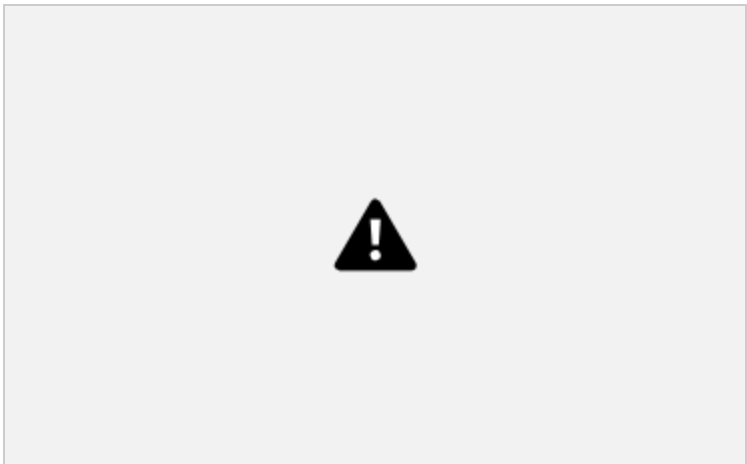


Figure 6



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