



Flyer Research

Effectiveness of the No Flyer Sticker in
the Halifax Regional Municipality

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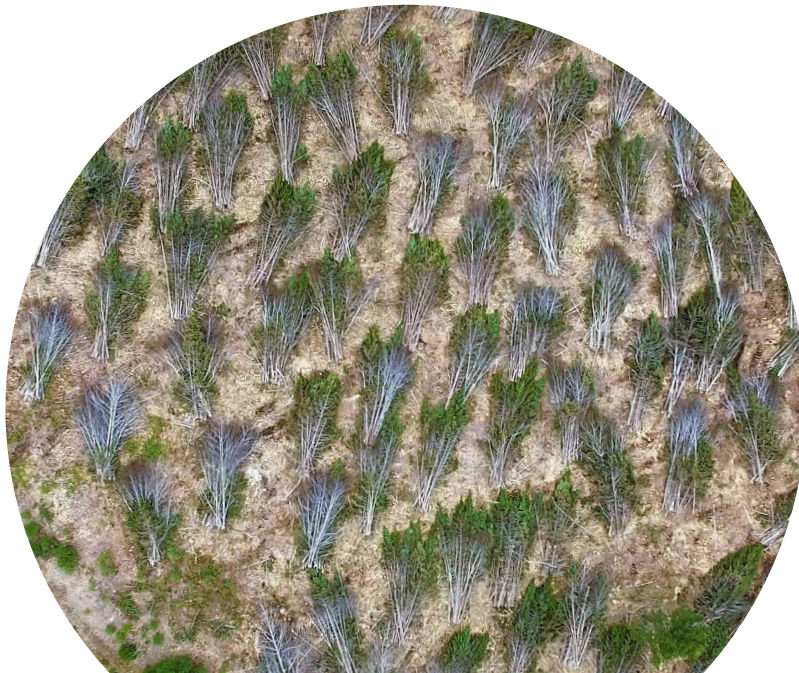
June 13, 2017

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Data for this study was collected by Claire Christie



1.0 Purpose

The purpose of this research was to determine the following:

- How much weight in “junk” mail the average household in the Halifax Regional Municipality (HRM) receives in a year
- If use of the No Flyers Sticker is an effective method to deter the amount of “junk” mail received
- How many trees are used to provide the amount of flyers that households are receiving on average, if new paper had to be used
- Other environmental aspects that are being effected by the distribution of unwanted “junk” mail

2.0 Methodology

Data was collected for this project from December 1, 2016 to January 31, 2017. From a sample group of 10, 6 households were chosen (3 posted the no flyer sticker and 3 did not). Over the course of those two months, all “junk” mail was collected and submitted to the EAC. Once all the mail was received, it was divided into the following categories:

Political Mail: any mail that was from any government body (federal, provincial or municipal)

Booklets: any mail that had three or more folds in them, overstuffed envelopes or magazines

Flyers: store sales, food delivery, auto repair shops etc.

Local: any handmade mail for things such as services, lost pets or neighbourhood issues

Newspapers: any newspapers that are delivered without a subscription, i.e./ Halifax Citizen*

3.0 Results

Once sorted, the mail was then weighed by category and by address. Some key findings in the sorting and weighing process include:

- Flyers weighed in the range of 4-20 grams per piece (this was dependant on size and type of paper used)
- Often in one mail box, multiple of the same flyers were present. For example multiple MPP flyers were in the same mail box, as well as multiples of Plan International

**The Halifax Citizen was delivered to a household, but was meant for the former tenants not the ones who currently reside there.*



The mail that was collected over a 1 month period can be seen below in Table 1. This data shows that the households without “No Flyer” sticker has a significant amount of “junk” or flyer mail being delivered to their houses, compared to those with the stickers.

Table 1: One Month Data for Households With and Without No Flyer Stickers

One Month Data									
Participant #	5	7	8	6*	9*	10*	overall group weight (lbs)	No Sticker Weight Totals (lbs)	Sticker Weight Totals (lb.)
Political									
Weight (lbs)	0.00331	0	0.00331	0	0	0	0.00662	0.00662	0
Booklets									
Weight (lbs)	0.08267	0.20503	0.29322	0	0	0	0.58092	0.58092	0
Flyers									
Weight (lbs)	0.24802	0.23920	0.33400	0.02756	0	0	0.84878	0.82122	0.02756
Local									
Weight (lbs)	0	0	0.00055	0	0	0	0.00055	0.00055	0
Newspaper									
Weight (lbs)	0	5.28558	0	0	0	0	5.28558	5.28558	0
							6.72245	6.69489	0.02756

(*denotes Sticker)

The data was then extrapolated to find the amount of mail that would be delivered to the same houses over the course of twelve months (Table 2). The data shows that over the course of 1 year, the households without the stickers had a combined weight of approximately 80 pounds of “junk” mail compared to the households with the stickers at less than 1 pound. This would mean that individual households in this study would get approximately 26 pounds of junk mail each year.

Table 2: Twelve Month Data for Households With and Without No Flyer Stickers

Twelve Month Data									
Participant #	5	7	8	6*	9*	10*	overall group weight (lbs)	No Sticker Weight Totals (lbs)	Sticker Weight Totals (lb.)
Political									
Weight (lbs)	0.03968	0	0.03968	0	0	0	0.07936	0.07936	0
Booklets									
Weight (lbs)	0.99208	2.46036	3.51858	0	0	0	6.97102	6.97102	0
Flyers									
Weight (lbs)	2.97624	2.87042	4.00800	0.33069	0	0	10.18535	9.85466	0.33069
Local									
Weight (lbs)	0	0	0.01323	0	0	0	0.01323	0.01323	0
Newspaper									
Weight (lbs)	0	63.42699	0	0	0	0	63.42699	63.42699	0
							80.67595	80.34526	0.33069

(*denotes Sticker)

Table 3: Summarized Comparison of Data

Summarized Comparison of Weight Data for One and Twelve Months		
Groups	One Month (lbs)	Twelve Months (lbs)
Without Sticker	6.69489	80.34526
With Sticker	0.02756	0.33069

If we look at the summarized data (Table 3), it is easy to see that having the “No Flyer” sticker reduces the amount of unwanted “junk” mail that is delivered. Placing a No Flyer sticker is an effective first step to stop the delivery of this type of mail.

According to Stats Canada, in 2001, in the Halifax Regional Municipality (HRM), the number of detached households was 76,155 and the number of semi-detached households was 10,025 (Municipality of Halifax). If we take these numbers and apply them to our findings the weight of “junk” mail is astronomical (Table 4)

Table 4: Weight of “Junk” Mail per Housing Type in HRM

Weight of “Junk” Mail Based on Household Type		
Type of Dwelling in HRM (2001)	Number of Dwellings in HRM (2001)	Total Projected Weight of “Junk” Mail (lb.)
Detached Housing	76,155	1,980,030
Semi-detached Housing	10,025	260,650
		2,240,680

By taking the number of households (detached and semi-detached) and multiplying those numbers by the approximate 26 pounds of “junk” mail per household (per year), the overall weight of unwanted mail in 2001 was 2,240,680 lbs. It is important to note that these numbers are only represent a fraction of the weight, this is not taking into consideration apartment buildings, row houses, other housing types or community mail boxes. Additionally it can be concluded that the weight of wanted mail has potential increased since 2001 because of new housing types being built.

4.0 Discussion

4.1 Trees

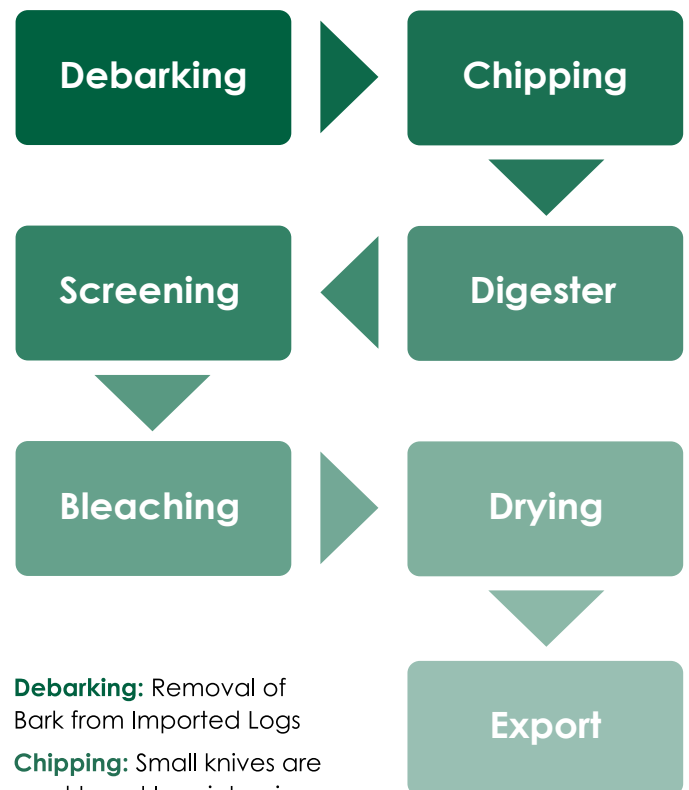
Determining the specific amount of trees that are needed to produce a specific amount of paper is difficult. The reason for this difficulty is because each tree is unique and would not provide the same amount of pulp. Other factors to take into consideration are the size and diameter of the tree, the type of tree, the age of the tree and the amount of water in the tree. To get the general idea, if an average tree with a diameter of 8 inches that was approximately 45 feet tall was processed, it would contain about 10 cubic feet of usable material. This would then make approximately 1500 sheets of paper, and about 8 trees would have to be cut down (Schildgen). If 1 ream of paper weighs 20 pounds and has 500 sheets of paper, this would mean that about 2 trees would be needed to make that amount of paper. In this study, we found that one household had approximately 26 pounds of flyer waste in twelve months, using that data as well as the weight of a ream of paper we can calculate that on average, a no flyer sticker would have the potential to save approximately 2.6 trees in a year.

Additionally if we apply this information to the data from detached and semi-detached homes (Table 4), of 2,240,680 pounds of paper would make 112,034 reams of paper, meaning that 224,068 trees would have been processed to make the flyers for those homes. In a one hectare lot there are approximately 1500 trees that are planted. For reference, Point Pleasant Park is 77 hectares. If Point Pleasant Park was entirely forested, an entire additional park would be required to produce the flyers that were sent

to detached and semi-detached houses in the HRM in 2001

4.2 Environmental Aspects

This section will describe the Potential Environmental Impacts that can occur from the entire pulping process. To understand the potential impacts, we must first understand to process of pulping from raw logs. This process can be seen below in Figure 1.



Debarking: Removal of Bark from Imported Logs

Chipping: Small knives are used to cut logs into pieces

Digester: Addition of Sodium Hydroxide and Sodium Sulfide. This process "cooks" the material

Screening/Washing: Screens are used to separate out unwanted materials (stones, wood knots).

Bleaching: Chlorine Dioxide is added to bleach the pulp

Drying: The pulp is then dried and packaged

Export: The packaged pulp is then exported to manufacturing facilities to make paper

Additionally, all activities that take place in a pulping plant have the potential to directly or indirectly affect the environment (air, water, energy and land).

Air

Air quality may be adversely impacted as a result of the emissions from a plant. The chemicals that are used to dissolve the lignin can off-gas pollutants such as methanol acetylaldehyde and formaldehyde. These pollutants can result in breathing issues and increased rates of leukemia. Volatile organic compounds (VOC's) are also generated during the pulping process. When nitrogen oxides and VOC's react in sunlight, they contribute to ozone formation. This contributes to many lung disorders. Sulfur, Carbon Monoxide and Nitrogen are also emitted during the process. These contribute to acid rain and can affect trees and fish, and can also lower pH in soil, which decreases nutrient availability. Indoor air quality conditions may be poor because of dust from the chipper.

Water

Chemical discharge can have damaging effects on aquatic ecosystems, surrounding water bodies and tributaries. The damage to these water systems can also create negative health issues for people living near these areas. Discharge is found in the pulping, bleaching and drying processes. The pollutants are mainly dioxins, which can damage reproductive systems in fish or humans. These can also cause cancer and have negative effects on immune systems. Organic materials that are discharged also consume oxygen during decomposition; oxygen is consumed and released back into the air as

carbon dioxide, contributing to climate change. Discharged Nitrogen and Phosphates increase algae growth, which can have harmful (and often lethal) impacts on aquatic ecosystems. Such algae growth also produces foul odors, and can be harmful to human health if there is direct contact. Finally, Sulphur dioxide can be discharged, increasing acidification, which can reduce or kill fish populations. Any water that has been used to cool machinery is then discharged back, will also change the ecology of the area and potentially kill organisms.

Energy

High amounts of energy are used to run plant machinery. Large consumption of fossil fuels leads to climate change. The more energy that is used directly effects the amount of energy supply. Disproportionate energy demands negatively impact the environment because it requires more drilling or mining.

Land

It is important to note that the extraction of the raw materials (trees) can lead to erosion and soil degradation. In addition to the footprint of the plant, roads used to transport and potential outside spills would affect the land.

4.3 Mitigation

The first step a household can take to stop receiving "junk" mail is to place a No Flyer Sticker on your mail box. Other steps that can be taken to opt out of receiving any flyers, mail or catalogues that you can view online. Ask for more corporate social responsibility from large companies. Finally you could ask your local MLA for help on this issue.

5.0 Conclusions

No Flyer Stickers are an effective method to deter unwanted “junk” mail. While during the study some “junk” mail was delivered to households with the sticker, the weight of that mail was significantly lower than those households without the sticker. The weight of the paper that was used to create the flyers in 2001 is astronomical, and people rarely give a second thought to unwanted flyers, other than the fact that they are something to put in a recycling bin. The amount of paper that could be saved from the production of unwanted mail would have a significant impact not only on the amount of trees that have to be processed, but also on impacts to air, water, energy and land usages. Ideally, people placing the no flyer stickers on their mailboxes would be the first step in ending the production of these flyers.

References

- Auhorn, Werner. Papermaking Chemistry & Technology. n.d. web page. 24 April 2017.
- Environment Canada. A Decade of Research on the Environmental Impacts of Pulp and Paper Mill Effluents in Canada (1992-2002). 23 July 2013. 24 April 2017.
- Municipality of Halifax. <https://www.halifax.ca/qol/AffordabilityStats.php#top>. 15 May 2014. 20 April 2017.
- Natural Resources Canada. Freshwater: The Role and Contribution of Natural Resources Canada. 11 December 2013. 24 April 2017.
- Schildgen, Bob. Sierra Club. 7 July 2014. 28 April 2017.
- United States Environmental Protection Agency. “The Pulp and Paper Industry, the Pulping Process, and Pollutant Release to the Environment.” 1997. Fact Sheet.
- World Wide Paper & Pulp Supply Website. 2003. Web Page. 24 April 2017.

