



# Plastic Pollution in Our Town



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# Issue Identification

## Plastic Pollution

My issue is plastic pollution. Grocery bags, plastic water bottles, paper cups and plates, shampoo bottles, and receipts are all examples of plastics. They may have benefits, but they actually *harm* the environment in *numerous* ways. They pollute our streams and lakes, get caught on, or even eaten by, animals, *killing* them, and even pollute the soil and groundwater. It can also harm us, people, indirectly. For instance, we eventually eat food grown on *polluted* soil, which is quite *deadly*. So, as shown, the disadvantages of plastics outweigh its benefits. In order to, at least, *lessen* this suffering in Chelmsford, plastic usage has to be *significantly* reduced around here.



# Root Causes

1

Overuse of Single Use Plastics

2

Inefficient Waste Management

3

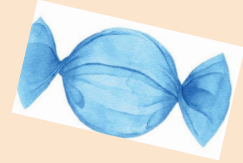
Inappropriate Disposal Methods

4

Plastics in Agriculture

5

Lack of Awareness



# Overuse of Single-Use Plastics

Single-use plastics are plastics we use only once and discard. As you can imagine, these types of plastics will accumulate in the environment the most. Some examples are grocery bags and plastic water bottles. They have plenty of benefits in Chelmsford. They help us transport our groceries, package goods, and so much more. But, since we dispose of them after using them just once, they easily end up in our streams and brooks, and, even, on plants and animals, potentially killing them.



# Inefficient Waste Management

Most regions, like Chelmsford, don't have the perfect system for recycling plastic waste. Most of the time, they end up burnt or buried. This causes a lot of pollution in our environment. When they are burnt, the smoke from the fires can suffocate nearby organisms. The fire itself could accidentally spread to our trees, burning them up in the process. Burying them isn't any better. Over time, after amounts of rainfall, a deadly substance called "leachate" is formed from plastics. If they are buried, that leachate can very easily spread to the soils in our farms where we grow crops. We eventually eat the food grown here, which contains at least a bit of leachate. This could affect our systems in the worst ways, making us really sick.



# Inappropriate Disposal Methods

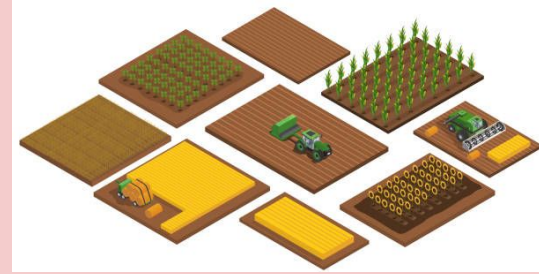
As you may have noticed, there is a lot of litter in our town. Most of them are plastics, or, specifically, single-use ones. Whether we litter on the streets or in the water, they harm the environment. The plastics on the road could get eaten by animals or get caught on plants. This can make them really sick, and, over time, kill them. The plastics can also end up in lakes or brooks even if they were originally on land. This can harm the small fish and microorganisms in these habitats. How would you feel if someone dumped a bunch of trash in your home?





# Plastics in Agriculture

There are a large number of farms in Chelmsford. We grow our crops there and even raise animals. Leachate isn't the only thing that affects them. Using mulch films and packages, which are made of plastic, can bring other harmful substances into the soil too. This decreases the health of our precious soil, which, in turn, spoils our crops, making us sick. If we don't dispose of these plastics properly, there could be severe consequences for, not just our environment, but our health too.



# Lack of Awareness

The majority of our town has been littering, over-using single-use plastics, and so much more. The worst part is the fact that most people don't even realize the long-term effects of this. People are unaware of the great value of reducing plastic usage and coming out with sustainable habits. Because of this, proper actions haven't been taken to decrease plastic pollution. How can we even start to build a bright future for Chelmsford right this moment without really understanding what issues are going on around us? We have to learn to be more aware of how our use of plastics is affecting our environment. It's about time we take action!





# Who is Positively Affected?

A lot of the people in Chelmsford are positively affected by causing plastic pollution. You see, there are reasons that not many people are trying their best to rid our town of plastic pollution. Most people litter plastics on the streets and sidewalks because there are no recycling bins nearby. Just tossing our trash behind us as we walk is actually quite convenient for us considering the fact that we don't have to carry our trash around all day until we find a recycling bin. This is actually one of the main causes of littering. It is probably the worst solution, but some find it simpler.



# Who is Negatively Affected?

One of the negatively affected groups is the marine animals in our lakes, streams, and brooks. Plastic ends up in bodies of water. There, most of it gets eaten by fish, making them sick. Plastic can also get entangled onto them, also potentially killing them. Leachate from plastics eventually makes their way into our streams and lakes. Since it's a very harmful substance, it can kill many species of fish and microorganisms, even if they don't consume it. Birds, squirrels, chipmunks, and rabbits are also negatively affected. These are just some of the many common animals in Chelmsford. They can also eat and get entangled by plastics. This, in turn, can make them sick and possibly kill them. Even the plants are negatively affected by this problem. Plastic litter can get entangled to them. This can shield them from the Sun, which isn't good at all since they won't be able to photosynthesize. Also, the plastic could potentially uproot the plants, killing them. Lastly, we, the people, are negatively affected. Yes, we can be positively affected, but there are some drawbacks. The leachate and microplastics that end up in the food and crops make people really sick, and could kill them. Also, the litter on the streets affects us too. The sharp plastics on the ground can hurt us if we trip or step on them.



# Who Can Help?

## Christopher Haley

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(978)-250-5203

Christopher Haley is the Sustainability Manager of Chelmsford. His job is to make recommendations and strategies in order to make sure Chelmsford has clean energy. I could reach out to him and show him my concern about plastic pollution and suggest ideas to reduce it. Since plastic pollution disrupts the clean energy in our town, he might be able to help me advocate plastic pollution and develop ways to rid our town of it.

## Matthew Schweitzer

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Matthew Schweitzer is the Public Facilities Director of Chelmsford. His job is to manage the aspects of the town's physical infrastructure, ensuring it's safe and efficient. Part of this is also to oversee the environmental management. So, I could get in touch with him, talk to him about my issue, and propose ways to reduce plastic pollution in Chelmsford.

## Christine Clancy

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Christine Clancy is the Director of Public Works of Chelmsford. She is part of the DPW (Department of Public Works). An element of their job is to oversee trash and recycling methods. If I manage to contact her, I could tell her about how plastic pollution is affecting our town. I might be able to give her some ideas of how to stop it as well.

# Potential Solutions

Potential Solutions	Benefits	Negatives
<b><u>Ban Single-Use Plastics:</u></b> We can convince the local government to carry out a local law in Chelmsford that forbids single-use plastics since they are the main cause for plastic pollution.	<ul style="list-style-type: none"><li>- <i>There will be less plastic litter on the streets and rivers.</i></li><li>- <i>There will be less chances of plastics and leachate getting into our foods.</i></li></ul>	<ul style="list-style-type: none"><li>- <i>Since people rely on single-use plastics for a lot of things, such as carrying their groceries, it can be hard to adapt to.</i></li><li>- <i>Companies that sell single-use plastics won't be able to stay in business any longer, so their workers can lose their jobs.</i></li></ul>
<b><u>Plastic-Eating Mushrooms:</u></b> A fungus called “Aspergillus Tubingensis” has been found to eat up plastics. Planting these mushrooms in plastic polluted areas, like landfills, causes them to thrive and finish devouring most of the trash.	<ul style="list-style-type: none"><li>- <i>They can almost rid the town of plastic pollution in maybe about a year after being planted in our plastic-polluted areas.</i></li><li>- <i>The fungi aren't as expensive as our regular waste management methods.</i></li></ul>	<ul style="list-style-type: none"><li>- <i>They are very slow-paced compared to the speed that plastic waste is generated.</i></li><li>- <i>The mushrooms have the potential to damage plants, which is exactly what plastic pollution already does.</i></li></ul>
<b><u>Educate &amp; Alert:</u></b> We could inform the people of our town about what exactly plastic pollution is, the ways it affects us, and how we can at least lessen it.	<ul style="list-style-type: none"><li>- <i>People will be able to learn about the issue and how it affects them, making them try to cut down on single-use plastics.</i></li><li>- <i>People can pass down this knowledge to others and the next generations, ensuring a bright and plastic pollution - free environment for our town.</i></li></ul>	<ul style="list-style-type: none"><li>- <i>People might ignore it or forget about it later on, causing them to not change their actions for the welfare of the town.</i></li></ul>

# Action Plan

I think that educating and alerting the people of Chelmsford is the best solution to the plastic pollution in Chelmsford. Putting this solution in place would benefit most of the people. Learning about how plastic usage is affecting the environment would help us take more responsibility when it comes to keeping our town litter-free. I decided to focus on this solution for a few reasons. One of my potential solutions was banning single-use plastics. This solution does have benefits. Single-use plastics are the main cause for plastic pollution in Chelmsford. If I choose to convince lawmakers to carry this out, companies that sell single-use plastic products would go out of business. Moreover, innocent people (who may also not be causing plastic pollution) could lose their jobs. There are a few ways to go around the ban, but I personally feel like it would be way too big of an adjustment for everyone. Another one of my solutions was to grow these plastic-eating mushrooms called “*Aspergillus Tubingensis*”. They thrive in plastic polluted areas and grow by devouring the plastic waste. Unfortunately, there is a huge downside to this. They can potentially kill plants in the process. This is really awful since using plastics is already killing the plants. Taking action on this solution would result in environmental damage. One of the main reasons I’m looking for a solution to plastic pollution in Chelmsford is to save the plants. So, plastic-eating mushrooms cause more harm than good. Eliminating these two potential solutions (banning single-use plastics and planting plastic-eating mushrooms), leaves us with one solution: educating and alerting. It doesn’t seem like it could do much, but it will if people take it seriously. Warning people about plastic pollution is supposed to make people think before letting a grocery bag fly out of their car or throwing a plastic spoon in the grass after a picnic. Sometimes, a lot of people don’t really listen to these alerts and tips. They might make decisions for the good of it for a few days, but, eventually, they’ll forget about it and go on with their life. I blame this on neglectfulness. By helping to educate and alert Chelmsford about plastic pollution, I want to make people actually change their behaviors regarding plastic pollution for the welfare of our great town. In order to actually make this happen, first, I have to create online fliers to raise awareness. It will explain the problem and suggest things everyone can do to help, like recycling or decreasing single-use plastic usage. Then, I could contact some of my stakeholders so that information about this topic can spread through social media. This will be really helpful considering the fact that, nowadays, most people are on technology most of the time. After that, I’ll get in touch with Christopher Haley, the Sustainability Manager of Chelmsford. I’d be able to present my plan and how it’ll be carried out to him and the rest of the committee. They’ll probably be able to help me advocate more, which is needed, since I need to be able to get through to a lot of people. This action plan is to be carried out at the town level. I want to see if I can make a change in Chelmsford first. Then, maybe, if it has significantly great results, it can be brought to the state level. Since this plan is focused at the local level, it won’t cost as much money. Also, it’ll take a while, but not that long since it’s only within Chelmsford for now. No laws need to be made or changed in order to make this solution possible. So, citizens don’t need to vote on this. I would like for the citizens of Chelmsford to voluntarily donate to help fund for it. We would have to create a website where people can donate their money. Of course, if any extra money is needed, it can be taken care of by private funding. But, advocating isn’t as expensive as it may seem. So, the donations should be just enough.

# Steps Toward Action



1

Create Online Fliers to Raise Awareness

2

Contact some of the Stakeholders to Spread the Information to Social Media

3

Get in Touch with Clean Energy and Sustainability Committee to Advocate

4

Create a Website where People can Donate

5

Examine the Outcome



ACTION PLAN



# Reflection

I did a civics action project on plastic pollution in Chelmsford and how it affects the environment. I investigated who it affects and how. My research allowed me to find out who can help me decrease plastic pollution in our town. I found some potential solutions to the issue and created an action plan.

I learned about what it takes to create a solution to a real-life problem. I also learned how to find suitable individuals to contact about a problem.

This project matters because it helps students to understand that, even though they are young and not allowed to do many things, like vote, they still have the ability to make change for the good of their community.



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