

The opinions expressed are our own and the comments are not a result of an audit performed by the office of the controller generally accepted Government Auditing Standards (GAGAS)

Single-Use Plastic Ban

*Tackling a Global Issue with
Local Action*



Lehigh County
Controller's Office
Special Report

May 20, 2020

Why Now?

We started our research into single use plastic before the COVID crisis hit the United States. We continue to see studies that say certain chemicals in plastic can leach out of the plastic and into the food and beverages we eat and drink. We are eating and drinking plastics and some of these chemicals have been linked to health problems such as metabolic disorders and reduced fertility.

A 2011 study published in Environmental Health Perspectives reported that when scientists tested commercially available plastic products labeled as BPA-free (a chemical found in many bottles), almost all of them leached out chemicals known to have estrogenic activity, meaning that they mimicked human estrogen. Some of the chemicals that were used to replace BPA in bottles contained more estrogenic activity than the BPA they replaced. Our daughters and sons are drinking these chemicals!

Many Americans think of our plastics problem as something that we can deal with later and perhaps as a problem that doesn't impact us locally. What people are not aware of is the tremendous cost that goes into cleaning our storm water systems because of the amount of plastics that get stuck in the system. People are not aware of the amount we spend on cleaning our streets of loose plastics.

COVID-19 has caused many elected officials to put off doing things because of the financial crisis. However, this is a good time to pass legislation around single use plastic. When people go back to work, they will need to buy new inventory of plastic bags, plastic straws etc. Before they put those orders in it is a good time to give our businesses time to restock with alternative sources. It will also allow our businesses to collect a small fee from those people that decide they want to use plastic bags.

The General Assembly is considering extending the moratorium on local single-use plastic bans. This preemption is another attempt to restrict local leaders from making decisions to help their local communities. Lehigh County should take a stand now! The time has never been more proper.

We must show the General Assembly that local control and local leadership know what's best for their community, and stand up to them by passing this ordinance. The preemption of local bags is just one of many issues that local communities have been precluded from acting on. Plastic has shown to harm the quality of our environmental and leech toxins into our bodies, threatening the growth of our children and the sustainability of our planet.

This is a bipartisan proposal backed up by science and pursued by communities throughout the country. Let us be part of the movement to protect our planet and ourselves from harmful chemicals.

There is no reason to delay. This is the perfect time to take action on single use plastics.



CONTENTS

Foreword by Controller Mark Pinsley 3

The Plastic Problem 4

Single-Use Plastic Bans 5

Local Solution 6

Why it Matters: Agriculture 7

Why it Matters: Infrastructure 8

Sources 9



Foreword from Lehigh County Controller, Mark Pinsley

Lehigh County Controller
17 S 7th Street
Allentown, PA, 18101



Since the 1950s, the global community has mass produced over 8.3 billion metric tons of plastic, half of which has been produced in the last 15 years alone. Plastic manufacturing has grown at twice the annual rate of the global GDP. It is now clear that we are experiencing an unprecedented ecological and environmental crisis before us which requires bold action to address.

The impact of the production of single-use plastics on our environment is both vast and devastating. The sheer number of plastic straws and bags complicates the recycling process, adding untold volume to our landfills and significantly increasing the cost of processing waste.

Our already struggling marine ecosystems must contend with the added danger of ingesting hazardous and potentially lethal substances. Sea turtles, whales, and sea birds regularly consume plastic causing severe injury or death. In many cases, fish caught for human consumption are contaminated with small bits of plastic, adding to even greater potential negative health consequences.

In the face of this enormous ecological catastrophe our communities must act.

As communities around Pennsylvania have begun to consider the banning of single-use plastics, the state legislature considered extending its local preemption of single-use plastic bans.

Fortunately, Philadelphia and West Chester, Pennsylvania, are pursuing ordinances that go into effect after the moratorium. We have a unique opportunity in Lehigh County to be a leader in municipal policy and by joining other municipalities in doing our part to protect and defend the natural beauty of our world.

In collaboration with Lehigh County Commissioner Percy Dougherty, we've crafted a bi-partisan proposal approved and vetted by our Solicitor's Office.

It is our hope the full Board of Commissioners will review and pass this ordinance provided it takes effect once the moratorium has phased out.

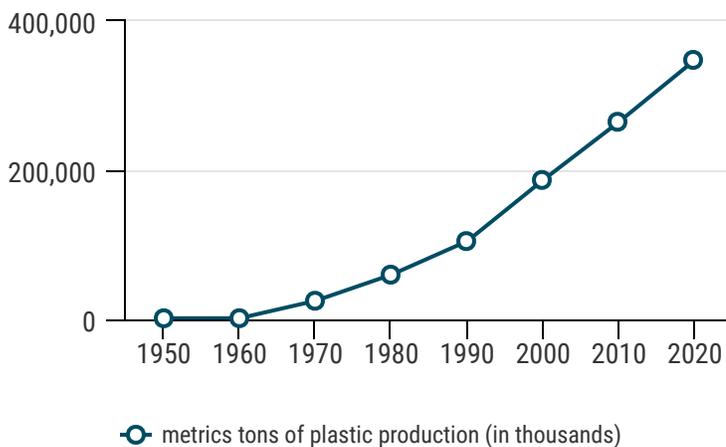
- Mark Pinsley

The Plastic Problem

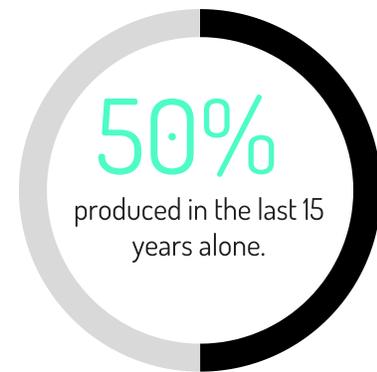


Plastic harms our communities, our wildlife and our environment.

Growth in plastic production



8.5%
average growth rate
since 1950



The Impact of Plastic on Our Planet

Damaging Ecosystems

- Estimated 15-21 trillion pieces of plastic currently in the ocean today.
- By 2050, 99% of seabirds will have ingested plastic.
- Up to 800 species are impacted by marine debris, of which 80% is plastic.

Energy Production

- Plastic production accounts for 8% of all oil consumed globally in a year.
- By 2050, that number will climb to over 20% of world oil production.

Cost to Our Communities

Philadelphia estimates it spends \$9-\$10 million dollars per year cleaning its streets and sewers of single-use plastics. single-use plastics have the lowest rate of recycling -- less than 5% of plastic bags being recycled.

Contributing to Climate Change

80% of all plastic waste ends up in landfills where it remains exposed to the elements. Plastic in landfills emits methane, which is 21 times more potent than carbon dioxide.

Single-Use Plastic Bans



Single-Use Plastic Ban: The State of Legislation

The State of the Law



Over 350 cities, counties, and states have enacted single-use plastic bans, predominantly around the use of plastic bags.

8

8 States have adopted single-use plastic bans including: California, Connecticut, Delaware, Hawaii, Maine, New York, Oregon, and Vermont.

349

349 municipalities have passed ordinances banning the use of single-use plastics or levied fines on their use.

50%

Roughly 50% of municipalities with bans on single-use plastics have implemented a fee or tax.

The implementation of single-use plastic bans around the country has come about as more Americans are becoming more aware of the consequences plastic use has on the environment and their communities.

These bans and broader environmental initiatives align well with public opinion and support. For example, a PBS NewsHour/Marist poll found that 2/3 of Americans indicated they would be willing to pay more to avoid using plastics. 1 in 5 Americans has expressed support for paying as much as 5% more to avoid plastic use, far in excess of a 10-cent fee placed on bags.

These bans reflect a pragmatic and market-based approach to curtailing an environmentally harmful behavior.



Total Plastic Bag Use in Lehigh County

- The average american family uses roughly 1,500 plastic bags in a year.
- Total housing units in county: 146,707
- Total plastic bags being used in Lehigh County: 220,060,500

Implementation:

The success of a plastic-bag ban or single-use plastic ban depends heavily on the nature of the ordinance. There are several key facts to consider regarding the implementation of a single-use plastic ban.

Fee vs. Ban: studies have determined that the use of a fee is likely to produce the same incentive to move away from using plastic bags as a simple ban.

46% of customers facing a ban chose plastic bags.

47% of customers facing a fee chose plastic bags.

Bans Drive Use of Other Types of Bags: a ban on single-use plastics in California resulted in a higher percentage of garbage bags purchased.

6% increase in 12-gallon trash bags



64% increase in 8-gallon trash bags



120% increase in 4-gallon trash bags



Reusable Bags Are Important: An effort must be made to push reusable bags to reduce environmental impact.

Cotton Bags: These bags require high reuse to eliminate the carbon footprint, between 131 and 20,000 more times.

Non-Woven Polypropylene Bags: These bags only have to be reused around 11 times.

The Lehigh County Connection: Why a Ban Matters to our Taxpayers?

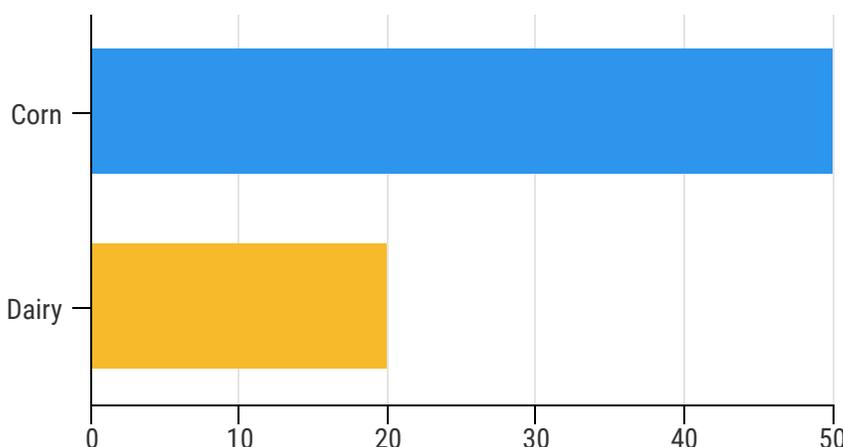
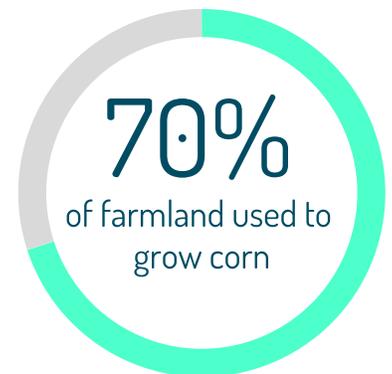
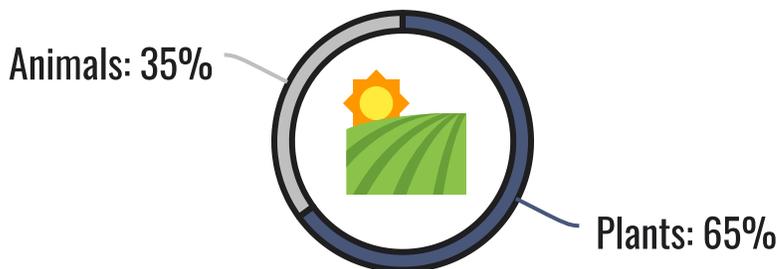


Agriculture

-  \$115 million: Total amount generated from Lehigh County farming
-  \$2.5 million: 2019 investment in farmland preservation from Lehigh County
-  8.9° F warmer by 2080 and 24% drier in Allentown as a result of climate change

Lehigh County Farming by the Numbers

Lehigh County Farms by Type:



Decline in corn production at 4° F temperature increase

Decline in dairy production

Plastic's contribution to the release of methane into the environment directly contributes to the heating of the earth and actively contributes to the destruction of Pennsylvania agriculture. A ban on single-use plastics would decrease the volume of plastic ending up in landfills and therefore contribute to a reduction in the warming of the planet.

The Lehigh County Connection: Why a Ban Matters to Our Taxpayers?



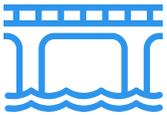
Infrastructure

The Lehigh Valley is one of the nation's leading hubs for logistics. 40% of the US population and 1/4 of the Canada's population is a one-day drive from the area. Lehigh County's infrastructure is key to the region's continued success.

Climate change directly threatens this infrastructure with increased rainfall and weather conditions that wear on local bridges.



By 2040, the total value of the Lehigh Valley freight economy will over \$130 million. 94% of the freight will be inbound and outbound.



Lehigh County has 119 locally owned-bridges.



\$144, 057, 961 total investment in bridges between 2019-2022.

Climate Change Impact of Local Infrastructure

Climate change is leading to heavier rain which is increasing flooding and damaging critical infrastructure.

Precipitation has increased between 10-20%. This rain swells streams and rivers putting increased stress on bridges.

Pennsylvania Emergency Management estimated that there was an extra \$125 million in additional costs as a result of damage from increased weather events.

50% was not covered by federal disaster aid leaving local government responsible for much of the repair.

Sources

- <https://publicintegrity.org/environment/pollution/pushing-plastic/inside-the-long-war-to-protect-plastic/>
- <https://www.washingtonpost.com/blogs/govbeat/wp/2015/03/03/a-plastic-bag-lobby-exists-and-its-surprisingly-tough/>
- <https://journals.openedition.org/factsreports/5071>
- <https://www.pca.state.mn.us/sites/default/files/leg-12sy1-06.pdf>
- <https://www.lrrb.org/pdf/201432.pdf>
- <https://www.pressdemocrat.com/news/2299353-181/garbage-trucks-weigh-heavily-on>
- <https://www.sierraclub.org/sierra/2019-4-july-august/feature/us-recycling-system-garbage>
- <https://www.sierraclub.org/sierra/2019-4-july-august/feature/stop-obsessing-about-recycling>
- <https://www.nwf.org/Home/Magazines/National-Wildlife/2019/June-July/Conservation/Ocean-Plastic>
- <https://www.pewtrusts.org/en/research-and-analysis/articles/2018/09/24/plastic-pollution-affects-sea-life-throughout-the-ocean>
- <https://news.un.org/en/story/2016/12/547032-new-un-report-finds-marine-debris-harming-more-800-species-costing-countries>
- <https://www.cbd.int/doc/publications/cbd-ts-83-en.pdf>
- <https://www.theguardian.com/sustainable-business/2016/jan/20/from-oil-use-to-ocean-pollution-five-facts-about-the-plastics-industry>
- https://www.biologicaldiversity.org/programs/population_and_sustainability/sustainability/plastic_bag_facts.html
- <https://www.surfrider.org/coastal-blog/entry/new-study-shows-plastic-as-source-of-greenhouse-gases-potentially-contribut>
- Philadelphia Ordinance: <https://www.phillyvoice.com/philadelphia-plastic-bag-ban-single-use-no-fee-2020-city-council-squilla/>
- <https://www.npr.org/sections/money/2019/04/09/711181385/are-plastic-bag-bans-garbage>
- <https://www.sciencedirect.com/science/article/abs/pii/S0095069618305291?via%3Dihub>
- Impacts of Various Reusable Bags on the Environment and The Value
- [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/291023/scho0711buan-e-e.pdf?](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/291023/scho0711buan-e-e.pdf)
[utm_source=npr_newsletter&utm_medium=email&utm_content=20190408&utm_campaign=money&utm_term=nprnews](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/291023/scho0711buan-e-e.pdf?utm_source=npr_newsletter&utm_medium=email&utm_content=20190408&utm_campaign=money&utm_term=nprnews)
- [https://www2.gov.scot/Resource/Doc/57346/0016899.pdf?](https://www2.gov.scot/Resource/Doc/57346/0016899.pdf)
[utm_source=npr_newsletter&utm_medium=email&utm_content=20190408&utm_campaign=money&utm_term=nprnews](https://www2.gov.scot/Resource/Doc/57346/0016899.pdf?utm_source=npr_newsletter&utm_medium=email&utm_content=20190408&utm_campaign=money&utm_term=nprnews)
- [https://stanfordmag.org/contents/paper-plastic-or-reusable?](https://stanfordmag.org/contents/paper-plastic-or-reusable?utm_source=npr_newsletter&utm_medium=email&utm_content=20190408&utm_campaign=money&utm_term=nprnews)
[utm_source=npr_newsletter&utm_medium=email&utm_content=20190408&utm_campaign=money&utm_term=nprnews](https://stanfordmag.org/contents/paper-plastic-or-reusable?utm_source=npr_newsletter&utm_medium=email&utm_content=20190408&utm_campaign=money&utm_term=nprnews)
- <https://conservingnow.com/plastic-bag-environmental-impact/>
- <http://theconversation.com/why-stop-at-plastic-bags-and-straws-the-case-for-a-global-treaty-banning-most-single-use-plastics-109857>
- <https://www.pbs.org/newshour/science/humans-made-8-3-billion-tons-plastic-go>
- <https://advances.sciencemag.org/content/3/7/e1700782>
- <http://www.niassembly.gov.uk/globalassets/documents/raise/publications/2011/environment/3611.pdf>
- <https://insideclimatenews.org/news/11062018/climate-change-research-food-security-agriculture-impacts-corn-vegetables-crop-prices>
- https://lvpc.org/pdf/MOVELV/freight/LV_RegionalFreightPlan.pdf
- https://lvpc.org/pdf/MOVELV/MOVELV_Chapter4.pdf
- <https://lvpc.org/pdf/2016/PA%20CFMP%20-%20Freight%20Plan%20-%20Final%20Draft.pdf>
- <https://lvpc.org/pdf/TIP/DRAFT%202019-2022%20TIP.pdf>
- <https://www.depgis.state.pa.us/ClimateChange/index.html>
- <https://phys.org/news/2017-08-climate-crop-yields.html>
- <https://www.nrc.gov/docs/ML0913/ML091390883.pdf>