



Earth911[®]

More Ideas, Less Waste

[How to Recycle](#)

[Where to Recycle](#)

[Business & Policy](#) [How & Buy](#)

Reading time: 3 mins

Is Grocery Delivery Greener Than Going to the Store?



By [Gemma Alexander](#)

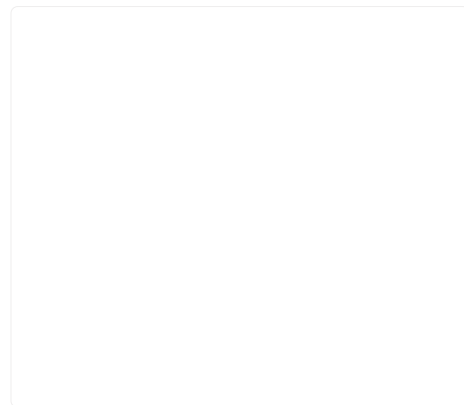
© MAY 19, 2021 [grocery delivery](#), [online grocery shopping](#)



During the pandemic, lots of people switched to online shopping, even for groceries. And businesses are betting that a lot of us like the convenience enough that we'll want to keep having our groceries delivered even after the pandemic. One study predicts that [70% of us](#) will be buying groceries online by 2024. But should we? Is grocery delivery better or worse for the environment than going to the store?

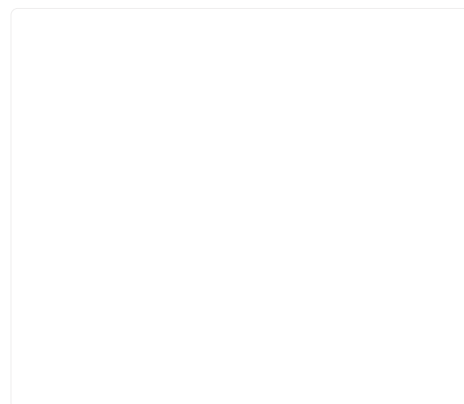
Grocery Delivery

In the days before refrigerators, it was common to have milk,



Never miss an update!

[JOIN OUR LIST](#)



window width : 1263 px

eggs, and ice delivered daily. As online shopping became popular at the turn of the 21st century, Amazon and other retailers experimented with grocery delivery, but people clung to the supermarket. In 2013, only [1% of the \\$850 billion](#) Americans spent on groceries was spent online. That changed during the pandemic, when nearly every supermarket chain built up their websites for online shopping with delivery and pickup. Recently, the online-only grocer [Farmstead](#) announced a partnership with last-mile food delivery service DoorDash that will enable one-hour delivery in all of Farmstead's active markets.

A 2013 study found that ordering groceries online could [reduce carbon emissions](#) by 20% to 75%. But e-commerce has changed a lot since 2013; today, the answer to whether grocery delivery is greener is not quite so clear.

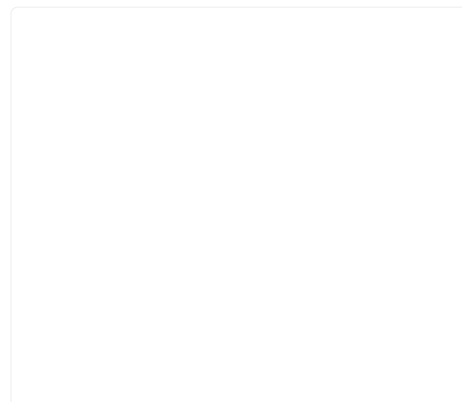
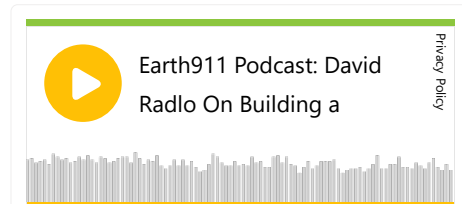
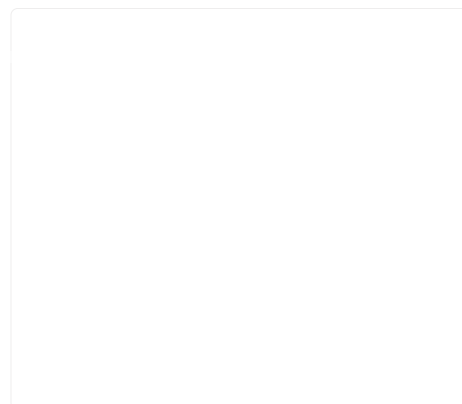
Warehouse vs. Supermarket

A traditional supermarket is energy intensive. These vast buildings must be maintained at a comfortable temperature for shoppers while simultaneously keeping food items refrigerated and frozen. Food in the grocery store has traveled from a warehouse – or several – through a complex [distribution system](#). Overstocking is standard (consumers are more likely to buy from abundant-looking displays) and it's estimated that [10.5 million tons of food waste](#) are generated from grocery stores each year.

If your groceries are delivered from the same store where you would shop in person, there is no environmental advantage. But [direct delivery](#) from a fulfillment center has the potential to eliminate some retail inefficiencies. Fulfillment centers eliminate at least one step from the distribution system, can store food in a way that keeps it fresh longest instead of in appealing displays for consumers, and can order only what they know they will sell.

Last Mile Impacts

[Last mile delivery](#) has an [outsized impact](#) on retail purchases and can cancel out some of a warehouse's efficiencies. [Secondary packaging](#) for delivery – such as disposable



bags, ice packs, and foam cushioning – is an additional source of waste. The number of delivery vehicles in cities is projected to rise 36% by 2030, which [could lead to](#) a commensurate increase in emissions and a 21% increase in congestion. The delivery distance from a large fulfillment center generates more transportation emissions, and there are environmental justice issues with the [siting](#) of industrial-scale distribution centers.

[Micro-fulfillment centers](#) located close to consumers are not only more equitable but they could also lower last-mile emissions [between 17% and 26%](#). Journey consolidation and smart routing powered by artificial intelligence are promising approaches to more efficient, [less polluting delivery](#) – although these are often at odds with [growing pressure](#) to offer same-day delivery and ever-narrower delivery windows like that touted by Farmstead.



There are both environmental and ethical considerations related to delivery drivers. Employees are generally treated better than [gig workers](#), who are not only more likely to be underpaid, but often must use their own (older, less efficient) vehicles. Amazon has ordered [100,000 electric delivery vans](#); delivery in an EV would be a better option than driving an internal combustion engine vehicle to the grocery store. (This is less significant in areas where electricity comes from [coal](#) or if delivery vans are refrigerated to keep food fresh.)

Which Is Better?

Determining the environmental impact of e-commerce is complicated. The answer to whether grocery delivery is greener than a trip to the supermarket is, ["it depends."](#) And

actually, that's good news. It means you can choose what works for you, and whatever you choose, you can do it more sustainably. Consider the following:

- Are you replacing a drive to the supermarket, or would you have walked or biked instead?
- Do your deliveries come from a local hub or a large, distant distribution center?
- Who makes the deliveries? Gig workers in their own vehicles or employees in company-owned electric vehicles?
- Do they deliver in reusable containers made from recycled materials or disposable ones made from virgin materials?
- Do they deliver your groceries according to an algorithm that reduces delivery miles or at the time you specify?

Whether you shop in person or online, try to do all your shopping in one trip instead of making multiple small purchases; and remember that [what you eat](#) has a much bigger impact on your carbon footprint than how you buy it.

advertising

[Edit](#)



Reading time: 3 mins

[Earth911 Podcast: PourMyBeer Explores the Future of Self-Service Beverages and Reusable Packaging](#)



By [Gemma Alexander](#)

Gemma Alexander has an M.S. in urban horticulture and a backyard filled with native plants. After working in a genetics laboratory and at a landfill, she now writes about the environment, the arts and family. See more of her writing [here](#).

Related Post

window width : 1263 px