

Stricter truck pollution rule would prevent 500 deaths a year in Chicago region, study shows

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Switching to stricter California-style limits on truck emissions would prevent 500 deaths per year in the greater Chicago region by 2050,

according to a new study from Northwestern University.

The study also found that 600 new childhood asthma cases would be prevented each year by 2050, and that neighborhoods with higher percentages of Black and Latino residents would see the greatest health benefits.

"It does show that we can do better," said lead author Victoria Lang. "And we can do better in such a way that not only are we preventing premature loss of life, but also just making cleaner and more equitable neighborhoods."

The Northwestern study, accepted for publication in the journal *Frontiers of Earth Science*, looked at the health impact of California's Advanced Clean Trucks rule, which is currently under consideration by the Illinois Pollution Control Board.

The Clean Trucks rule would require that manufacturers of medium and heavy-duty trucks slowly ramp up the number of zero-emissions vehicles sold to 40% to 75% (depending on the category) in 2035.

Among the findings of the Northwestern study: If the Clean Trucks rule was implemented here, the areas that would see the greatest reductions in deaths would be disproportionately Black.

Taken together, the areas with the greatest reductions in deaths would be 48% Black, while the region as a whole is 17% Black.

Under President Donald Trump, the Environmental Protection Agency has asked Congress to review California's waiver allowing the Clean Trucks rule and other state vehicle emissions standards that exceed federal standards.

That could lead to a lengthy fight of the kind seen during the first Trump administration.

The Chicago study stemmed from meetings between Northwestern researchers and community groups that have pushed back against truck pollution in hard-hit neighborhoods such as Little Village.

The community groups said it would be helpful if a study looked at the impact of a real-world policy proposal, as opposed to an abstract scenario in which a certain percentage of trucks would go electric.

"We need something we can lobby for," the advocates told the researchers, according to Lang, a Ph.D. candidate in Northwestern's Department of Earth, Environmental and Planetary Sciences.

The researchers took up the challenge, constructing a model that looked at the Clean Trucks rule's impact on [nitrogen dioxide](#), a key tailpipe emission that can aggravate asthma and other respiratory diseases.

"This partnership, where we get to be objective scientists but we still get to talk to community groups—that part is the exciting part about this science I think," said study co-author Daniel Horton, an associate professor of earth, environmental, and planetary sciences at Northwestern.

The researchers used an EPA air quality model that had been developed to look at pollution across the entire country, but ran the model at a higher resolution so the effects on smaller areas would come into view. The model drilled down to just over 0.6 miles, Lang said.

The researchers also modified the model to reflect where truck idling typically occurs: in warehouse districts, which tend to be near ports, rail yards and airports.

"When you start to zoom in (on the truck pollution hot spots), especially in downtown Chicago, you see the Loop really pop out, where you have these intersecting major interstates meet up," Lang said. "Downtown is typically an area we see with heightened pollution but also along major interstate corridors in the area."

The study also tracked ozone, which can aggravate lung diseases such as asthma, emphysema and chronic bronchitis. Ozone levels can actually be reduced by nitrogen dioxide, and sure enough, when nitrogen dioxide levels went down in the researchers' model, ozone levels went up.

The higher [ozone levels](#) would lead to 40 additional deaths per year in the greater Chicago region by 2050, according to the study.

The researchers found that, taken together, the areas with the highest rates of truck-related nitrogen-dioxide exposure are disproportionately Black. On average, residents of these areas were 45% Black, 33% white, 13% Latino and 7% Asian.

The greater Chicago region—Cook, DuPage, Kane, Kendall, Lake, McHenry and Will counties—is 51% white, 17% Black, 23% Latino and 7% Asian.

Horton, who leads the Climate Change Research Group at Northwestern, credited the Environmental Defense Fund with helping his team connect with community groups working to reduce truck pollution.

"Many community members have worked with academics before, and don't really see the payoff necessarily, so there's not always a lot of trust there," he said. "In this case, the Environmental Defense Fund has a long working relationship with a number of the community groups that we worked with and they vouched for us."

In addition to suggesting that the researchers focus on a real-world policy, community groups told the researchers that pollution models weren't capturing the full effect of truck emissions observed on the Southwest Side.

"(The study) was very much informed by the community groups saying, the model's not capturing this lived experience, and then science coming in and saying, yes, you're right (according to) satellite observation," Lang said.

The community groups have been eagerly awaiting the release of the study, according to one of their representatives, Brian Urbaszewski, director of environmental health programs at the Respiratory Health Association.

"It's a nice clear, 'If you do this, this is what you can expect to happen. This is the health benefit you would see,'" he said of the study. "That's the takeaway: 500 people in one year in 2050 are not dying and 600 kids aren't developing asthma."

The Illinois Pollution Control Board is currently reviewing a proposal to adopt the Advanced Clean Trucks rule. The board has held public hearings and is now accepting public comment.

Already, the Northwestern study has had at least one effect.

"It's changed our trajectory in how we want to partner and work with these communities going forward, and it's been tremendous for me, especially as a student," said Lang.

"It really took the community coming to us and saying, 'Hey, that's dumb. You should do it this way instead,' (for us) to start to do actual policy proposals," Horton said.

"We have this one that Victoria has led, and we have a couple of other policy proposals in the pipeline that we're going to investigate," he said.

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