

Could home demolition program be spreading lead dust?

Keith Matheny, Detroit Free Press

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(Photo: June 2015 photo by Kimberly P. Mitchell/Detroit Free Press)

Detroit's ambitious demolition program, which has been razing thousands of unsightly and unsafe houses and other structures per year to fanfare and criticism, may be replacing one danger in neighborhoods with another: toxic clouds of lead dust from old paint.

The city, which already has one of the country's worst rates of blood-lead poisoning in children, also has some of the oldest housing stock of any major U.S. city. And most of the houses being taken down contain lead-based paint, which the nation banned in 1978.

Scientific study of similar, smaller housing demolition projects [in Chicago](#)

(<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3804089/>) and other cities shows the potential for debris and

dust clouds containing elevated levels of lead particulates to spread up to 400 feet from demolition sites, depending on the steps taken to contain it and on the weather.

Detroit officials have made blighted-house demolition a centerpiece of the city's resurgence, and cite safer, better neighborhoods with increasing home values as a result. Mayor Mike Duggan in October said rising per-house demolition costs partly are a result of the environmental safeguards his administration added to the process. But the Free Press found multiple instances of contractors not following contract specifications designed to protect the public and the environment, such as failing to adequately wet houses and debris during demolition and removal to reduce dust; failing to remove debris promptly, and failing to notify those living near the projects and provide them with lead-safety recommendations.



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Even if demolitions followed city specifications perfectly, scientific studies show those methods still cause lead dust to spread from a demolition site. And the huge scale of Detroit's demolitions, combined with construction crews failing to use the strictest standards to control lead dust, is likely spreading unsafe levels of toxic metal across neighbors' yards — and, in some areas, into parks, playgrounds and other public places — based on the results of scientific research elsewhere.

"I totally agree that the houses need to come down," said Lyke Thompson, director of the Center for Urban Studies at Wayne State University and a leading city advocate on combating lead contamination. "I just wish they would come down in a way that's more protective of Detroit's kids in the long run."

It's not that Detroit isn't doing house demolitions by the book. There is no book. A kitchen renovation has more lead paint regulations than does demolition of 8,000 lead-paint-filled houses, some experts said.

Jeremy Westcott's Environmental Testing and Consulting, based in Romulus, is one of several companies doing asbestos testing for the city's demolition program. Asbestos has far stricter regulations in demolitions, he said.

"They just don't have the same kinds of rules for lead," he said. "There's nothing for people who live in the area."

Detroit is removing blighted houses at a pace perhaps unrivaled in U.S. history, typically between 100 and 200 houses per week. From May 2014 through Sept. 30 of this year, the city demolished 6,760 houses. City officials have identified 40,000 blighted houses they'd like to remove.

“The overall goal is, of course, to eliminate blight in the city of Detroit, and to do it in a way that does not sacrifice life-safety issues for the citizens,” said Brian Farkas, special projects director for Detroit Building Authority, the agency overseeing the demolitions.

“The whole reason we are doing this is to improve the lives of Detroiters.”

But evidence is clear that demolition is a significant contributor to lead dust pollution, “especially in a place like Detroit, where there’s so much demolition going on,” said David Jacobs, research director for the National Center for Healthy Housing and a lead author on scientific studies reviewing demolition dust’s lead impacts in other U.S. cities.

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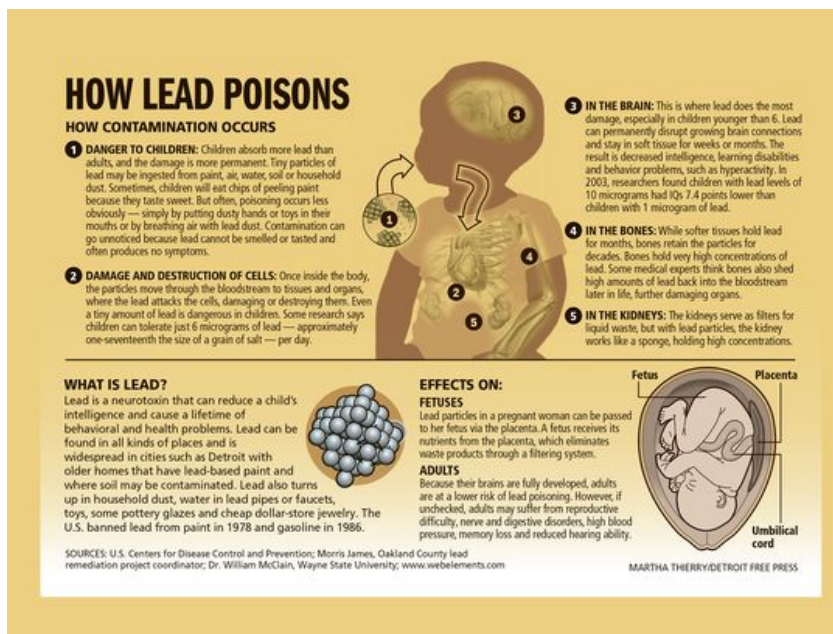
Dolphin Street residents, from left, Katie Pravic with her son, Corey Keegan, 2, seated on her lap; Dezmond Belanger, 5; Nevaeh Belanger, 4; and the Belangers' sister, Shawna Hansen-Ross, watch a city-contracted crew demolish a house across the street from their neighboring homes. Pravic and Hansen-Ross said they received no notification of the impending demolition, or information on keeping the children indoors and safe from lead dust pollution (Photo: Keith Matheny/Detroit Free Press)

Even dust that’s not visible to the human eye — lead particles the size of a few grains of sugar — can cause poisoning and lifelong brain damage in children.

“There is no safe level,” said Felicia Rabito, an associate professor in the Department of Epidemiology at the Tulane School of Public Health and Tropical Medicine in New Orleans. “Lead is not supposed to be in our body. ... This is a known neurotoxin. It’s known to affect children’s brains, their development, many other organ systems.”

Lead has another societal impact, Thompson noted: Lead-poisoned children lose the capacity to control their impulses, a problem that continues into adulthood.

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How lead poisons (Photo: Martha Thierry Detroit Free Press)

“That’s what leads to juvenile delinquency and crime later in life,” he said.

Terms made, then broken

Detroit officials worked with the Environmental Protection Agency and the Michigan Department of Environmental Quality on developing a plan to control dust during house demolitions. They agreed to wet a house with a hose as it is demolished, then spray water on the building debris as it’s loaded out. Called “wet-wet demolition” because of its watering during both processes, the method significantly reduces — but does not eliminate — the spread of lead paint dust contamination, according to scientific studies.

The EPA endorses the process. “We feel fairly comfortable with the process the city is currently using for the demolition activities,” said Rick Karl, director of EPA’s Superfund program for the agency’s region that includes Michigan.

But the problem is not all contractors are following the process.

Despite contracts requiring removal of debris within 48 hours, at many sites, it has remained piled for days or weeks and becomes sun-dried, with dust allowed to scatter to the wind.

Yetivia Adams said she was “ecstatic” that the city razed blighted houses on either side of her home on Lee Place in late May.

“One was burned out,” she said. “They were falling down, dangerous.”

The debris from the demolished house on one side was picked up within a day. But the dusty materials from the razed house on the other side of Adams’ home sat in a huge pile behind an orange, synthetic fence for weeks, less than 10 feet from her house.

“I can’t even come outside,” said Adams, 58, who along with her husband, Robert, is a retiree. “It’s getting all on my porch. I thought once they tore it down, they would come and get it.”

The debris pile was finally removed June 24 — exactly a month after demolition — after the Detroit Building Authority, which is spearheading blighted-home razing in the city, learned Adams had spoken with the Free Press, authority spokesman Craig Fahle confirmed.

“The 30 days was completely unacceptable,” Farkas said. “We’ve suspended contractors for being out of spec,” he said, referring to them not following agreed-upon demolition specifications in their contracts.

The environmental standards called for in the city’s blighted-house demolition contracts “in many, many cases are not being followed by the contractors,” Thompson, of the Center for Urban Studies, said.

“There are a lot of cases where you go and see a hose sitting there not being used, or a hose not being pointed where the demolition is going on, or where a single stream is pointed where the excavator is going, and that’s not going to make any difference with the dust plume that’s going in a dozen other directions.”

Even with sufficient hoses and water supply, a house requires a lengthy soaking to prevent dust during demolitions that just isn’t occurring, Westcott, of Environmental Testing and Consulting, said.

“Having a hose or two hoses is going to make a very minimal impact on dust — that’s not a matter of opinion; it’s a fact,” he said. “You can’t wet it enough unless you are there hours before a demolition.”

At a home demolition on Dolphin Street, a worker sprayed water from a hose on the house’s first floor while the second floor was demolished. Dust could be seen migrating off-site.

'They should have ... warned us'

Watching from across the street, about 50 feet away, were nearby residents Katie Pravic and neighbor Shawna Hansen-Ross. Pravic’s 2-year-old son, Corey Keegan, and Hansen-Ross’ siblings, Dezmond Belanger, 5, and Nevaeh Belanger, 4, played nearby.

Both Pravic and Hansen-Ross said they received no advance notification of when demolition would occur and no special instructions to protect the children from potential lead-dust exposure. They were not provided with HEPA vacuums, nor were they informed to keep doors and windows shut, they said.

After learning of the potential for lead-paint dust to spread and the effects it can have on children, Pravic said, “They should have come around and warned us.”

“At least the houses closest to it,” Hansen-Ross added.

Crews should have informed residents, Farkas said. The city’s policy requires hanging notifications about impending demolition, protective information and where to call to learn more on doorknobs of homes on either side of a house to be demolished, as well as at homes across the street, he said.

It was a similar story on Manor Street — no advance notice, no special instructions, no special vacuums, according to residents near a demolition site.

“They just came. We just saw the trucks coming up,” said Tamika King, who lives across the street from a city-demolished house. King has three children at home with her, ages 12, 9 and 5. Her mother, Dorothy King, also lives with her.

“They didn’t tell nobody nothing,” Dorothy King said. “When they were knocking it down, they were wetting it, but when they were taking the stuff out, they didn’t. There was stuff flying all over. They should have told us something.”

Mendota Street resident Gary Watson said crews also wet materials only during the demolition of a nearby house, and not during debris removal.

“My nephew is next door, and his daughters are 6 and 14,” he said. “It ain’t good.”

Even a demonstration video of a Detroit home demolition put on YouTube by Adamo, the leading contractor for Detroit’s blighted-house removals, as an advertisement for its services appears to show uncontrolled dust and limited wetting.

When shown the video, Farkas said, “I did see them using water. That’s what our contract calls for.”

He had a similar reaction to video of a home demolition from the Islandview Village neighborhood on the city’s lower east side from last year. It also showed dust billowing away from the site.

 None animated GIF

“This contractor is following our specifications for using the wet demo(lition),” Farkas said. “I would add, this house sitting there as it is, unaddressed, creates its own public health issue.”

Is there an even better way?

In an Oct. 13 address to the Detroit City Council, Duggan defended rising per-house costs of demolitions by pointing to environmental protections added to the process on his watch, including the requirement of non-contaminated fill dirt in the holes left behind and the wet-wet process. He noted that two contractors had been fired and four suspended for failing to follow environmental rules agreed upon in their contracts.

“We have had issues with contractors who failed to remove the asbestos before they demolished the house. That’s a significant health risk,” Duggan said. “We’ve had contractors who failed to water down the building before they knocked it down, which meant there was dust to the neighbors. That is not acceptable. We’ve had folks put dirty fill into the holes without getting it certified.”

Duggan points to enforcement actions against those contractors as signs of the program’s effectiveness.

“I think it’s a reasonable question to ask: Should we do more houses to a lower standard, or fewer houses to a higher standard?” he said. “The top experts in state and federal government are citing what we are doing as the model for the United States.”

But a protocol established in 2005 during home demolitions in East Baltimore, Md., does a better job containing lead dust than the types of methods being used by Detroit’s crews. [Scientific studies prove it \(http://www.nchh.org/Portals/0/Contents/Article0858.pdf\)](http://www.nchh.org/Portals/0/Contents/Article0858.pdf).

The East Baltimore protocol includes such steps as:

- Using two to four hoses to wet a house before and during demolition and debris removal.
- Providing widespread notification to neighbors, community and faith-based organizations on when and where demolition would occur.
- Using high fences to contain dust as demolition is occurring.
- Providing neighbors of demolition sites with cleaning materials such as vacuums with special HEPA filters.
- Sweeping nearby sidewalks and streets after demolition and debris removal.
- Monitoring, by a third party, of air, dust-fall, dust wipes of neighboring home exteriors and soil testing throughout the process.
- Having a full-time dust suppression manager.

Most of those steps are not being taken in Detroit. Wetting has often consisted of one crew worker spraying a hose only as demolition commences, with visible dust clouds frequently uncontrolled, billowing away toward neighbors’ homes and public areas.

The use of the Baltimore protocol in home demolitions had a dramatic effect on the spread of lead-paint dust, according to a 2008 study led by Jacobs, of the National Center for Healthy Housing. Baltimore’s house demolitions were compared to similar activity in Chicago, where wetting sometimes occurred but not all of the other provisions of the Baltimore protocol were followed. The results showed lead dust-fall in Chicago was five times higher than in Baltimore.

The difference in the maximum lead dust-fall during demolitions was even more striking: In Baltimore’s demolitions, it reached 257 micrograms of lead per square meter per hour; while in Chicago, lead levels rose above 32,000 micrograms per square meter per hour. This was despite the fact that far more houses were demolished in Baltimore, in a smaller area and in a shorter time than in Chicago, the study found.

Farkas said city officials “studied extensively” the Baltimore protocol while devising Detroit’s standards. But when asked about the many other components from Baltimore that the city didn’t adopt, Farkas called the protocol “a small research project.”

“It called for a lot of things that were great: the wet-wet demo(lition); the advanced notifications that we’ve endorsed and expanded upon,” he said.

"The City of Baltimore doesn't use the Baltimore protocol. They use what the EPA has endorsed in the Detroit protocol."

Jacobs, one of the leading researchers into the Baltimore protocol's effectiveness in lead-dust control, questioned Farkas' description.

"Although Baltimore had fewer properties than Detroit, it was not really a 'small research' study because it covered several hundred row homes," he said.

"I think the Baltimore results are compelling. I know of no research or evaluation of what Detroit is doing — nor do I know why they changed something that the evidence shows works pretty well. If there were modifications, then it seems there should be some data collection to determine effectiveness."

The state Department of Environmental Quality has interest in such research in Detroit, but hasn't done it.

"The DEQ would like to know more about the amount of lead and possibly other metals released during home demolitions in Detroit and other older urban areas," Lynn Fiedler, chief of the agency's Air Quality Division, said in a June 9 e-mail to the Free Press.

Fiedler said the DEQ had applied for an EPA grant to do "community-scale air toxics ambient monitoring." The funding would allow the DEQ to monitor for asbestos, lead and other metals in the dust near demolitions in Detroit, both during demolition and for a few days afterward, she said.

"We think this study could fill the information gap and, depending on the results, may lead to changes in practices or regulations of the activity as needed," she said.

Fiedler, however, informed the Free Press in an October follow-up that the DEQ had yet to receive such a grant, and was not doing the air testing.

One Detroit Building Authority official, Deputy Director James Wright, questioned whether lead dust from paint in demolished houses is a problem in the city. "There's no dispute that there is lead-based paint in the houses," he said. "Whether or not that is changed into a dust material as the house is being demolished, there is no proof that is actually happening."

Wright noted that contractors are doing their own air monitoring at demolition sites to ensure they are complying with some of the only lead rules that apply — Michigan Occupational Safety and Health Administration rules limiting workers' exposure to lead.

"There hasn't been any proof of lead contamination or lead particle dust via that monitoring that's been reported to us or reported through the contractors to MDEQ or any other agencies," he said.

But a 2008 scientific study comparing the Chicago and Baltimore demolition experiences noted that airborne lead particles are often too low to be measured in the air, as lead is heavy and settles from the air relatively quickly. That doesn't remove the health risk, however. [A 2013 study that included Wayne State University](http://www.researchgate.net/publication/235688776_Linking_Source_and_Effect_Resuspended_Soil_Lead_Air_Lead_and_Children's_Blood_Lead_Level) (http://www.researchgate.net/publication/235688776_Linking_Source_and_Effect_Resuspended_Soil_Lead_Air_Lead_and_Children's_Blood_Lead_Level) found that seasonal increases in the amount of lead in Detroit children's blood can be attributed to ground-level lead dust being scattered by summer winds.

A nonprofit group called Doing Development Differently in (Metro) Detroit, or D4, presented the Baltimore protocol to the City Council on two occasions last year: the first related to development of the new Detroit Red Wings stadium and the surrounding area, the second related to the blighted-home demolition program, said D4 Executive Director Mary King.

"We wanted council to be aware of the national best practice of demolition and deconstruction as well," she said. "It appears they did not necessarily incorporate all of the high standards that were included in that protocol."

That's unfortunate, King said.

"Detroit is in the spotlight in so many different ways," he said. "That presents the city with such an opportunity to proceed in a way that's in alignment with the very best practices nationally. And in this situation, that definitely is the East Baltimore protocol."

Though the Duggan administration is under fire for increased costs in its blighted-house demolition program, adding additional dust-suppression techniques from the Baltimore protocol would not add great additional expense, Thompson said. For example, he said, crews could further hold back dust from a house being demolished with something as simple as "a 10-to-12-foot high tarp" anchored by "pipes, old tires with some concrete at the bottom."

Rabito said it was "very, very concerning" that city officials and environmental regulatory agencies accept lead-dust suppression methods that studies show are less effective.

"It's very unsafe," she said. "We know so much about lead. It's just wrong to be creating additional hazards in an urban setting with an already vulnerable population."

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A contracted demolition crew from Detroit-based Homrich demolishes a house on Dolphin Street, as part of the city's blighted house demolition program (Photo: Keith Matheny)

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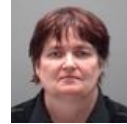


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