POISONED BY ZIP CODE:

An Assessment of Dallas' Air Pollution Burden by Neighborhood

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Executive Summary

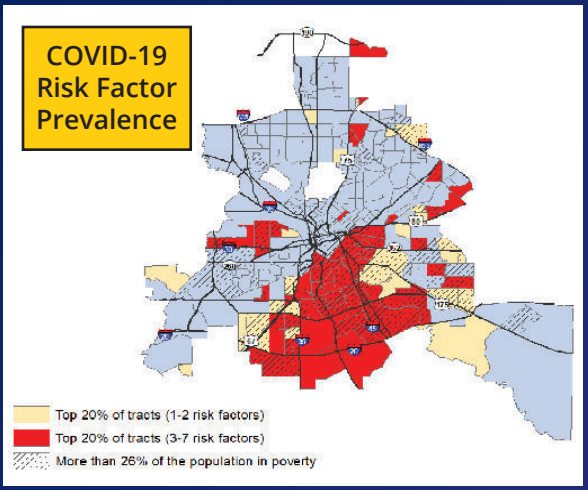
This research seeks to comprehensively estimate the air pollution distribution by zip code and City Council District for Dallas. Using aggregated air pollution permits from the Texas Commission on Environmental Quality (TCEQ), estimates for mobile sources of pollution such as warehouses distribution centers, rail switchyards and highways, we seek to comprehensively document sources of air pollution at the zip code level in Dallas.

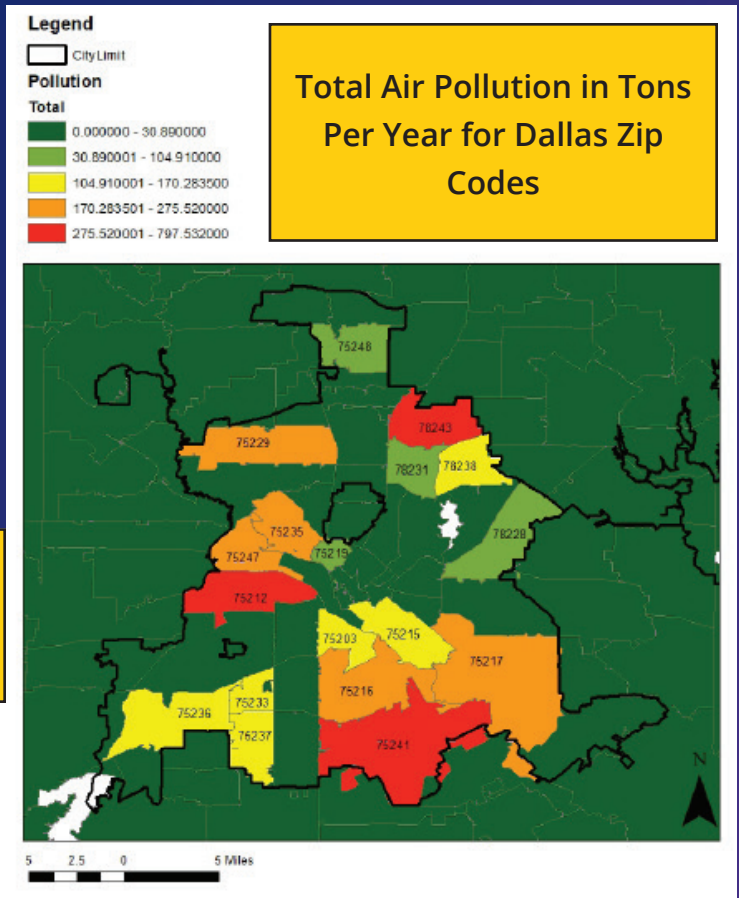
In the City of Dallas, there is a 15-year difference in life expectancy depending on the zip code that you live in.

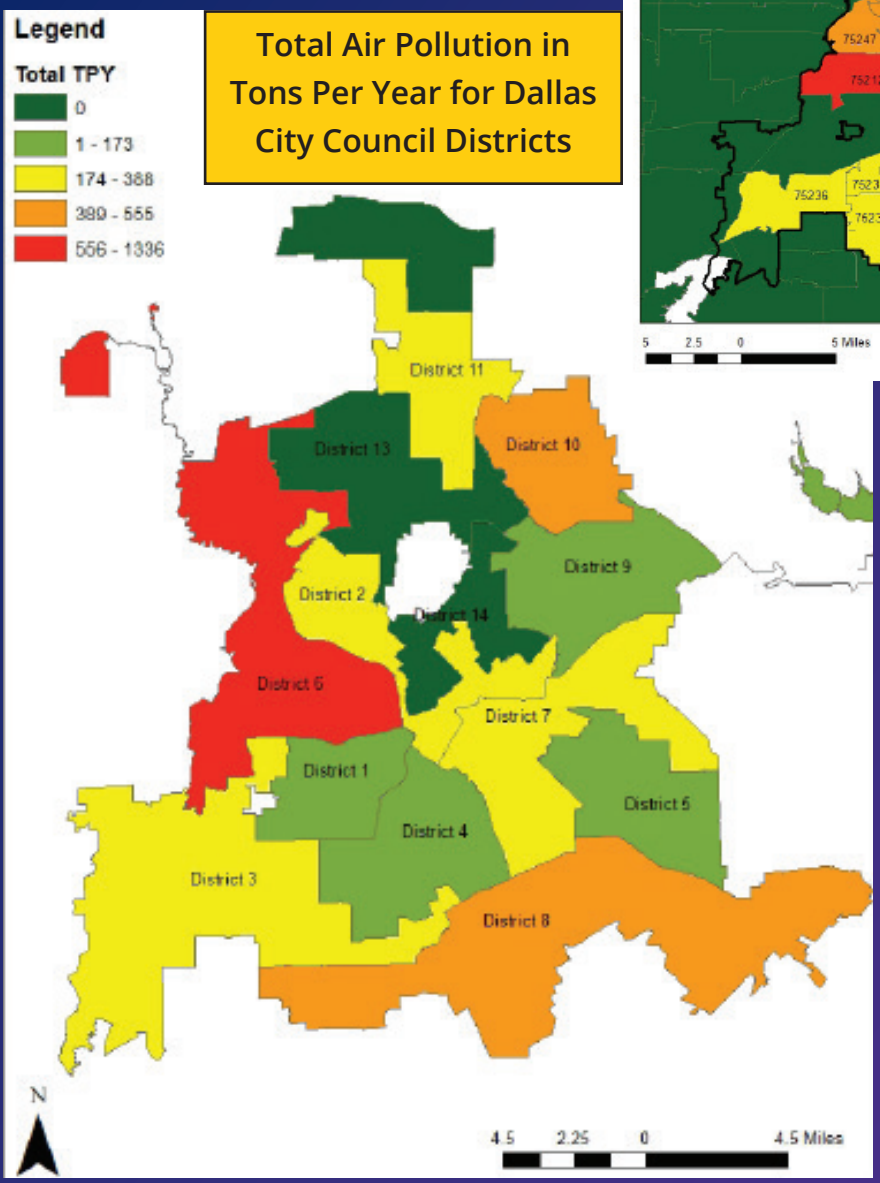
There is a disproportionate amount of air pollution emitted in the Southern Sector of the City, south of I-30 or the Trinity River. In the context of the global COVID-19 pandemic, this continues to be an alarming reality that must be addressed for Dallas to consider itself an equitable City.

SPRING 2020

PAUL QUINN COLLEGE







Air Pollution burden by Council District for...

- Total Air Pollution
- PM Pollution
- SOX Pollution
- VOC Pollution

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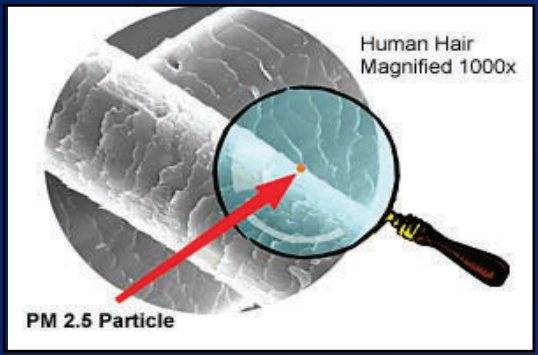


Some neighborhoods have higher concentrations of heavy air polluters close to residential land use areas, such as Joppa, West Dallas, and Floral Farms.

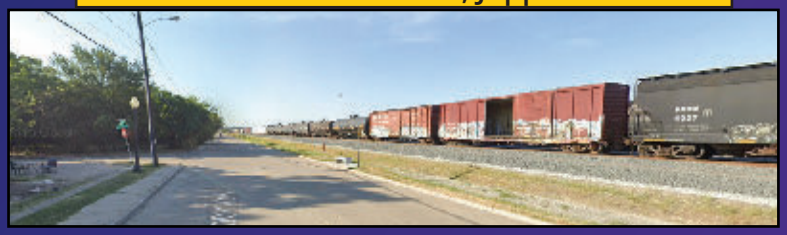
McCommas Landfill, Floral Farms Distrct 8

- According to the estimate of 0.42 tons of air pollution per person in Joppa per year, over a lifetime of 90 years, a resident would be exposed to almost 40 tons of air pollution.
- According to the estimate of 0.03 tons of air pollution per person in West Dallas per year, over a lifetime of 90 years, a resident would be exposed to almost 3 tons of air pollution.
- According to the estimate of 4.48 tons of air pollution per person in Floral Farms per year, over a lifetime of 90 years, a resident would be exposed to almost 3 tons of air pollution.

For this study, we selected three major air pollutants to analyze: particulate matter (PM2.5 and PM10), sulfur dioxide (SOX), and volatile organic compounds (VOC).

Top 5 Most Polluted Districts	Total	PM	SOX	VoC
MOST POLLUTED	District 6 Councilman Narvaez	District 8 Councilman Atkins	District 7 Councilman Bazaldua	District 6 Councilman Narvaez
2	District 8 Councilman Atkins	District 6 Councilman Narvaez	District 6 Councilman Narvaez	District 10 Councilman McGough
3	District 10 Councilman McGough	District 7 Councilman Bazaldua	District 2 Councilman Medrano	District 3 Councilman Thomas
4	District 3 Councilman Thomas	District 5 Councilman Resendez	District 11 Councilman Kleinman	District 2 Councilman Medrano
5	District 7 Councilman Bazaldua	District 11 Councilman Kleinman	District 8 Councilman Atkins	District 11 Councilman Kleinman

Union Pacific Miller Yard, Joppa District 7



GAF and Browder Yard, West Dallas District 6

ALL DALLAS SITES HAVE THE RIGHT TO BREATHE EQUALLY.

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RECOMMENDATIONS

Reducing Air Pollution Burden

I. Account for Cumulative Impact in Permitting Decisions

Currently, there is no requirement at the federal, state, county or city level that mandates a comprehensive assessment of the air quality conditions in a neighborhood or area before an additional air polluter is permitted in the same vicinity. Using either real time monitors in a specific neighborhood or census tract or calculating the permitted air pollution for that area, as was done in this report, would help alleviate the disproportionate distribution of air pollution per capita seen in Joppa and parts of West Dallas.

II. District or Zip Code Emission Cap

Using the cumulative impact model above, maximum air pollution burden levels could be determined by City Council based on guidance from public health experts to decrease the consequent health impacts of the air pollution burden. without a maximum district or zip code cap, coupled with deed restrictions or zoning changes in areas zoned for industrial use near residential use, there will likely be continued industrialization and pollution.

III. Amortization

Some industrial polluters such as TAMKO and GAF based on their emissions per year and location are likely too dangerous for the health of neighboring communities to continue operating at their current locations. Because of this, the only way to protect residents would be to amortize the properties. This technique was used in the 1980s with the RSR Lead Smelter in West Dallas. Because of the threat to public health and safety, the only option was to provide a timeline for the removal or relocation of the site to an area more appropriate for its heavy industrial use.

Minimizing Air Pollution Exposure

I. Buffer Zones

Buffer zones between industrial operators and residential areas is a short term remedy to minimizing the exposure of residents in areas with high air pollution burdens. A study by the California Environmental Protection Agency California Air Resource Board advised a buffer one of 500 feet from highways and 1,000 feet from rail yards or distribution centers

II. Physical or Organic Barriers

The buffer zones should also be demarcated with either physical or organic buffers. Implementing a mandatory organic or structural exposure reduction plan for areas with high air pollution burden would likely reduce exposure to Dallas residents.

Increasing Accessibility for Oversight of Data and Permitting

I. Centralized and Accessible Information

Compiling the information for this report was extremely labor intensive and required technical expertise beyond the scope of the general population. Information on air pollution sources at the zip code or census tract level should be made available using TCEQ data or real time air monitors.

II. Expand Permit Notice Radius

When a City permit is up for renewal or if there is a zoning change, the radius for notification is 200 feet. An analysis should be conducted for the type of pollution permitted at the site seeking a permit renewal, to calculate the fallout area of that pollution. The radius of notice should account for this air pollution impact area.