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Senate Bill 179
Senate Committee on Natural Resources and Economic Development
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Chief Environmental Science Officer

Chairman Birdwell and members of the committee, thank you for the opportunity to speak before you today. My name is Loren Hopkins and I am the Chief Environmental Science Officer for the City of Houston. The City of Houston is in support of Senate Bill 179

Concrete Batch Plants produce air pollution, specifically particulate matter emissions including particulate matter 2.5 microns and smaller, referred to as fine particulate matter, that can be **inhaled deep into the lungs**.

Inhalation of fine particulate matter poses serious human health risks **including** asthma attacks, cardiac arrest, stroke and **premature death**.

We know that concrete batch plants emit this fine particulate matter because pollution from concrete batch plants is already a serious problem in Houston. There are a total of 89 concrete batch plants in the city limits with various operational statuses.

The batch plants are not spread equally across the city, so that impacts are distributed. In fact, there are 57 ZIP codes with no concrete batch plants and 43 with at least one, six with as many as four and one with nine.

While individual plants have high concentrations, the situation is worsened when multiple plants are in the sample spatial area. PM_{2.5} matter from concrete batch emission plumes can be additive.

The batch plants that are clustered are often within a mile of each other. If they were spread equally across the city, there would be one per seven square miles.

The ZIP code with the highest number of concrete batch plants is 77048 with nine in 11 square miles. In this ZIP code, there are four concrete batch plants in one cluster. The closest pair is 0.04 miles (235 feet) and the average distance between pairs is 0.37 miles. Residences are located as close as 28 feet (across the street) from a concrete batch plant. This is a populated area with 18,520 residents in the ZIP code.

In this same ZIP code, data from 2022 from the City of Houston's emergency department/facility data feed system, ESSENCE (Electronic Surveillance System for the Early Notification of Community-based Epidemics), indicates the rate of asthma emergency department visits is the second highest in the city, with a rate of 1,123 per

100,000 people. This rate is 3 ½ times higher than the rates for the rest of the city ZIP codes that do not have any concrete batch plants, a statistically significantly higher rate ($p \leq 0.05$).

The ZIP code with the HIGHEST asthma emergency department visit rate is 77051, which is contiguously downwind of the nine concrete batch plants in 77048, according to Houston's predominant wind direction. That puts 77051 northwest of ZIP code 77048, receiving PM2.5 from 77048 as well as two of its own concrete batch plants.

Additionally, in 2021, the rate of respiratory failure in children, defined as the number of health care facility visits (in those reporting to ESSENCE) in children under 18 with a respiratory failure provider diagnosis (including acute respiratory failure unspecified) out of the under 18 estimated population, was 243 cases per 100,000 children under 18 in 77048 compared with 130 cases per 100k children in the rest of the city. This equates to a children respiratory failure rate in 77048, where we have 9 concrete batch plants, 1.86x (close to 2x) higher than the rest of the city.

To recap statistics, in Houston's ZIP code with 9 concrete batch plants, the asthma emergency department visit rate is 3.5 times higher than the rest of the city as a whole (the second worst asthma attack rate ZIP code in the city) and the rate of children with respiratory failure is close to 2x higher than the rest of the city.

In addition to asthma, 77048's rate of stroke per 100,000 people was 1.79 x the stroke rate of the rest of Houston, with a ranking of the 8th worst ZIP code. Analysis of the City of Houston 911 data for cardiac arrest indicates the community in 77048 is in the city's cardiac arrest high-rate region which has double the rate of cardiac arrest compared to the rest of the city.

This bill would give TCEQ the ability to protect overburdened communities from exposure to excess pollution by limiting the number of batch plants by area. Limiting these pollutants will lower the risk of exacerbation of health consequences of exposure to PM2.5 such as strokes, cardiac arrest, and asthma attacks. The TECQ could say, "No. That community has had more than its fair share of pollution, so no further projects are permitted until the pollution is reduced." This bill will reduce adverse health risk and the associated costs.

Thank you for your consideration.