PAUL E. FURRH, JR.
Attorney at Law
Chief Executive Officer

ERNEST W. BROWN, JR.
Attorney at Law
Deputy Director

SAPNA AIYER
Directing Attorney

HEATHER KEEGAN
Director of Litigation

AMY DINN
KIMBERLY BROWN MYLES
Litigation Directors

Lone Star Legal Aid
EQUITABLE DEVELOPMENT INITIATIVE

CAROLINE CROW
NOOR MOZAFFAR
CHASE PORTER
AMANDA POWELL
JOE WELSH
Staff Attorneys

Houston Address:
P. O. Box 398
Houston, Texas 77001-0398

1415 Fannin, 2nd Floor
Houston, TX 77002

(713) 652-0077 x 8108 Telephone

May 16, 2024

VIA EMAIL tceqamnp@tceq.texas.gov
Texas Commission on Environmental Quality
P.O. Box 13087
Attention: Holly Landuyt, MC-165
Austin, Texas 78711-3087

Re: TCEQ's Draft 2024 Annual Monitoring Network Plan

Dear Sirs:

On behalf of its respective clients identified below[1] and their represented communities, Lone Star Legal Aid (LSLA), Air Alliance Houston, New Liberty Road Community Development Corporation (NLRCDC), Coalition of Community Organizations, Achieving Community Tasks Successfully d/b/a ACTS, and Public Citizen submit these comments to the Texas Commission on Environmental Quality (TCEQ) regarding TCEQ's Draft 2024 Annual Monitoring Network Plan (2024 AMNP). The undersigned signatories appreciate the TCEQ's prompt response to these comments and hope these comments are reflected in the final version of the 2024 Air Monitoring Network Plan for Texas submitted to the U.S. Environmental Protection Agency (EPA).

[1] In submitting these comments, Lone Star Legal Aid is representing the following community organizations: Port Arthur Community Action Network, Westry Mouton Project, Southend Charlton-Pollard Greater Historic Community, Caring For Pasadena Communities, Super Neighborhood 48 Trinity Gardens / Houston Gardens, Super Neighborhoods 49 / 50, Pleasantville Area Super Neighborhood 57, Progressive Fifth Ward Community Association, Dyersforest Heights Civic Club, East Aldine Civic Association, Houston Department of Transformation, and Better Brazoria—Clean Air & Water.

I. COMMENTERS

A. Lone Star Legal Aid

LSLA's mission is to protect and advance the civil legal rights of the millions of Texans living in poverty by providing free advocacy, legal representation, and community education to ensure equal access to justice. LSLA's service area encompasses one-third of the State of Texas, including 72 counties in the eastern and Gulf Coast regions of the state. LSLA's Environmental Justice team focuses on the right to the fair distribution of environmental benefits and burdens and the right to equal protection from environmental hazards. LSLA advocates for these rights on behalf of impacted individuals and communities in LSLA's service area. These comments are submitted on behalf of the following organizations which serve and represent low-income environmental justice communities and their residents:

1. Port Arthur Community Action Network;
2. Westry Mouton Project;
3. Southend Charlton-Pollard Greater Historic Community;
4. Caring for Pasadena Communities;
5. Super Neighborhood 48 Trinity Gardens / Houston Gardens;
6. Super Neighborhoods 49/50;
7. Pleasantville Area Super Neighborhood 57;
8. Progressive Fifth Ward Community Association;
9. Dyersforest Heights Civic Club;
10. East Aldine Civic Association;
11. Better Brazoria—Clean Air & Water; and
12. Houston Department of Transformation.

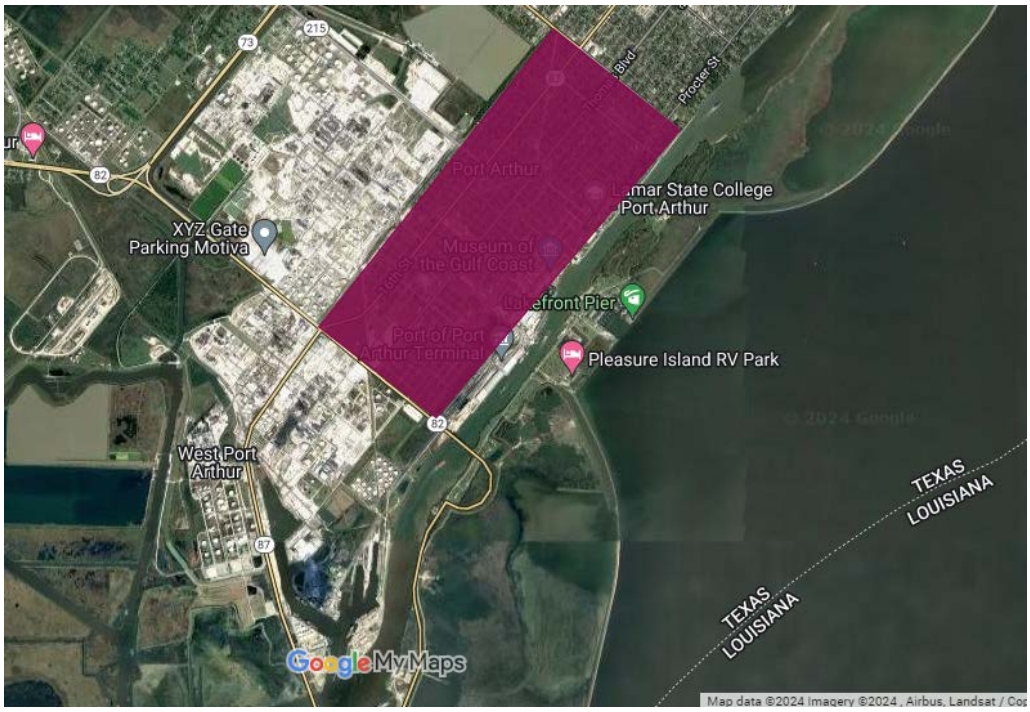
Community Organizations Represented by Lone Star Legal Aid

1. Port Arthur Community Action Network

The Port Arthur Community Action Network (PACAN) is a not-for-profit community-based organization in the West Port Arthur neighborhood of Port Arthur that mobilized in the immediate aftermath of Hurricane Harvey to address a slew of environmental releases and problems associated with the storm. The organization was responsible for hosting disaster relief legal clinics for the citizens of Port Arthur and advocated for a more effective response to the storm by local governmental authorities. In addition, PACAN has and remains active in reviewing, commenting, and challenging air permit applications in the West Port Arthur area that would compound existing issues with air and water quality in the neighborhood and larger city. PACAN is also active in commenting on statewide and federal plans regarding environmental protection and regulation, including several iterations of TCEQ's Annual Monitoring Network

Plan. PACAN is committed to improving the quality of life of residents in Port Arthur, Texas. West Port Arthur is surrounded by major petrochemical and other large industrial facilities, the Port of Beaumont, and crisscrossed by railroads and truck routes related to those industrial sites.

Figure 1: Location of Residential West Port Arthur in Port Arthur[2]



2. Westry Mouton Project

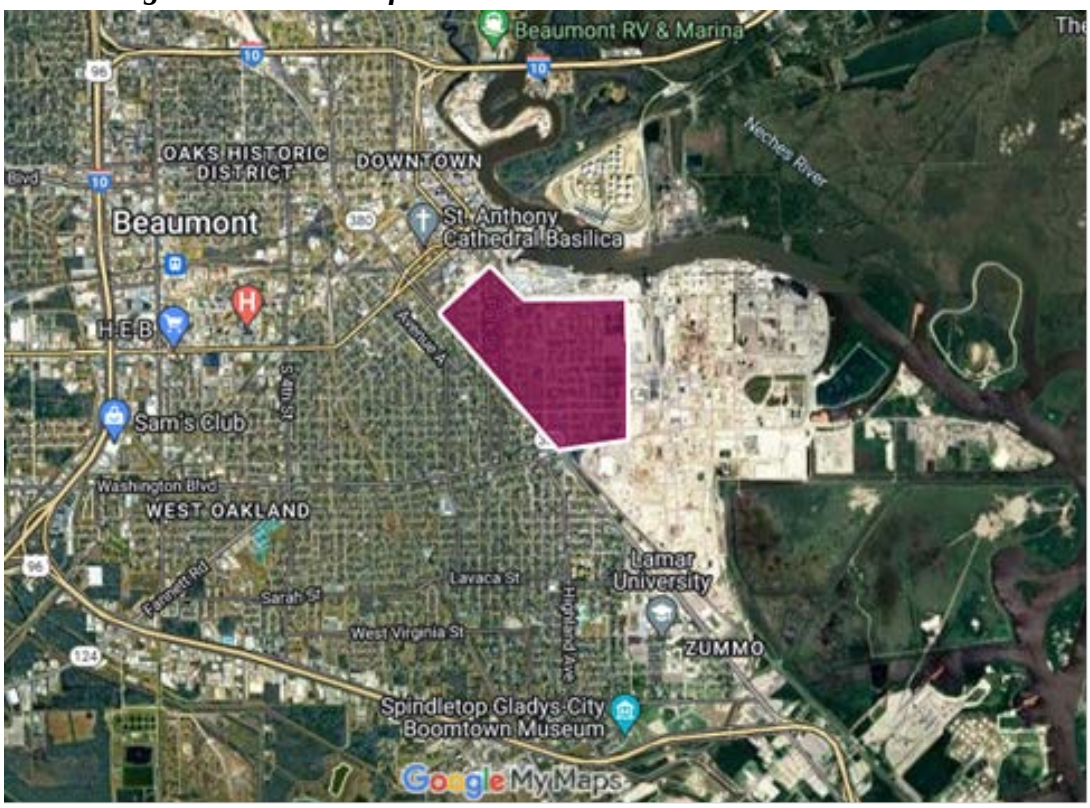
The Westry Mouton Project (WMP) is a not-for-profit community-based organization that serves the Beaumont, Texas area. WMP's primary focus is on Beaumont's "East Side", which is historically, and remains, a lower-income, largely Black community. The East Side is the half of Beaumont east of Interstate-10 and US Highway 287. The East Side is bisected by those major highways, many railways, the Port of Beaumont, and numerous large industrial facilities. WMP focuses on ensuring Beaumont's youth are provided with a healthy environment, broadly understood, to develop and succeed in life. WMP's work includes a summer camp for local young girls and working with at-risk youth to teach them how to find job opportunities. WMP also works to improve the natural environment in Beaumont so it can provide the area's youth with clean air and clean water, and so that WMP can ensure the health consequences of pollution do not affect their development and ability to succeed. WMP has previously commented on the several iterations of Air Monitoring Network Plan and has performed other advocacy to support a healthy environment for Beaumont's youth.

[2] Screenshot taken from Google Maps, www.google.com/maps.

3. Southend Charlton-Pollard Greater Historic Community

The South End Charlton-Pollard Greater Historic Community Association (SECPGHCA) represents the Charlton-Pollard neighborhood and adjacent residents on Beaumont's East Side. Charlton-Pollard is a historically Black and low-income neighborhood that has seen substantial urban degradation in recent years. SECPGHCA aims to promote community engagement, pride, and development via various community projects, including a community garden and sponsoring youth sports programs. SECPGHCA has also engaged in environmental justice advocacy, including commenting on air permits for major industrial facilities and now, commenting on air monitoring in the area.

Figure 2: Location of Residential Charlton Pollard in Beaumont[3]



4. Caring for Pasadena Communities

Caring for Pasadena Communities (CPC) is a community-based nonprofit organization committed to raising awareness of environmental issues affecting residents of Pasadena and nearby communities along the Houston Ship Channel, where many of its members live and work. CPC is organized to advocate for these communities, improve public education on environmental issues, and to ensure equal treatment for low-income residents in environmental matters. This work has entailed direct involvement in the public participation process of numerous projects by

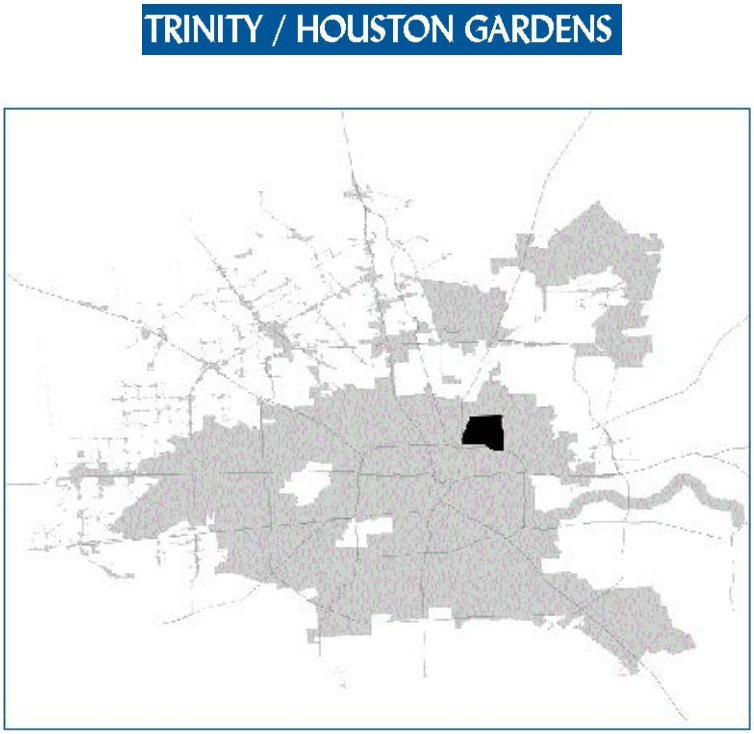
[3] Screenshot taken from Google Maps, www.google.com/maps.

highlighting environmental justice concerns for various permitting agencies that would otherwise go unnoticed and unaccounted for.

5. Super Neighborhood 48 – Houston Gardens / Trinity Gardens

Super Neighborhood 48 "Trinity / Houston Gardens" takes its name from two communities: Trinity Gardens and Houston Gardens in Houston, Texas, also known as the "Gardens." The City of Houston defines the area known as Super Neighborhood 48 by the geographic boundary shown below, which is within City Council District B and comprises 4,395 acres (6.87 sq. miles) in the Northeastern part of the City of Houston, Texas:

Figure 3: Location of Super Neighborhood 48 in Northeast Houston



6. Super Neighborhood 49/50 – East Houston & Settegast

Super Neighborhood 49/50 is made up of East Houston and Settegast. These two neighborhoods are also in Northeast Houston.

East Houston is adjacent to McCarty Road Landfill, a Harris County landfill, and a major industrial park, Railwood. The positioning of this community between these industrial operations and waste sites makes it a particularly vulnerable community to pollution and degraded air quality. East Houston is a predominantly Black community.

Settegast is about 8 miles from downtown Houston and sits outside of Loop Interstate-610. Settegast is a predominantly Black community. The Settegast community is surrounded by interstates and industrial users—Loop Interstate-610 to the south, U.S. Highway 90 to the east, and Union Pacific Railroad intermodal terminal to the west. The eastern portion of Settegast also shares its eastern boundary with two of Harris County's active landfills, McCarty Road Landfill and Ralston Road landfill. Settegast is subject to particularly poor air quality resulting from its industrial neighbors.

Settegast and East Houston have a community air monitoring network implemented by Air Alliance Houston to evaluate this area's disproportionately impacted air quality.

Figure 4: Super Neighborhood 49 – East Houston

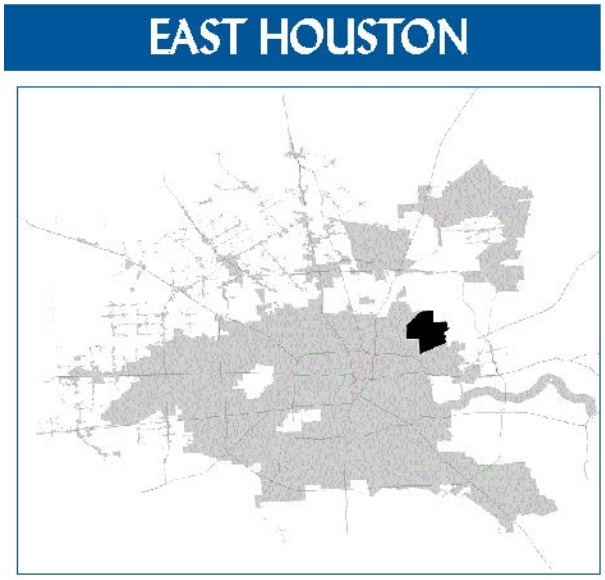
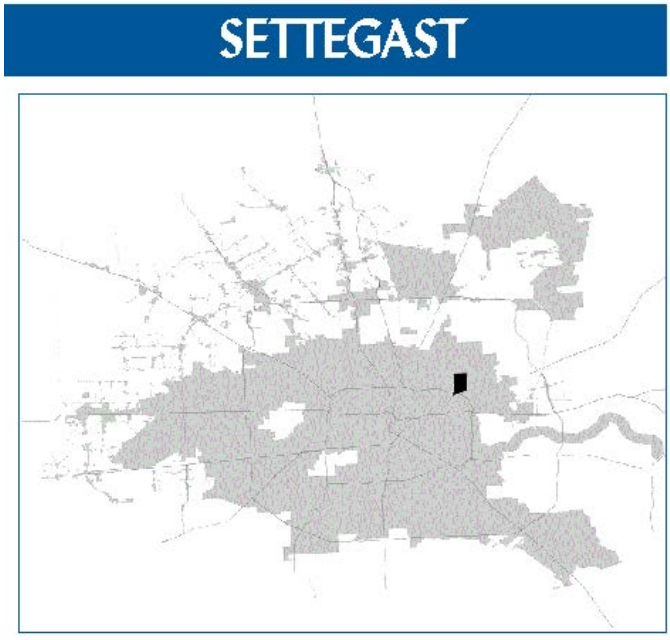


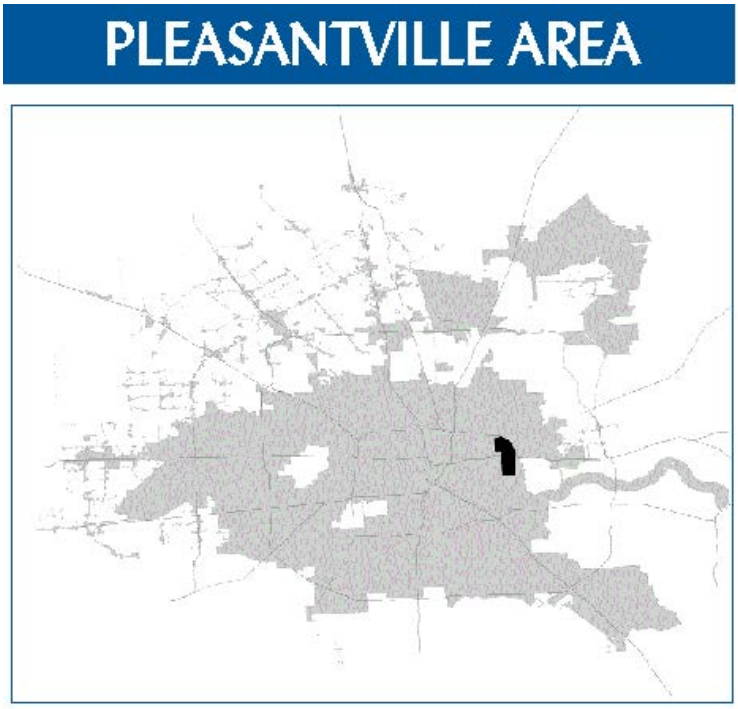
Figure 5: Super Neighborhood 50 – Settegast



7. Pleasantville Area Super Neighborhood 57

Pleasantville Area Super Neighborhood 57 is an organization in Houston, Texas representing individuals, civic clubs, and businesses located within two neighborhoods close to the Houston Ship Channel. Pleasantville was developed after World War II and remains a historic, predominantly Black community. Given its proximity to port-related activities, Super Neighborhood 57 and other community groups in the area like Achieving Community Tasks Successfully (ACTS) are extremely focused on environmental justice issues and air quality in the area. Recently, the neighborhood installed one of the first community-led air monitoring programs in the country.

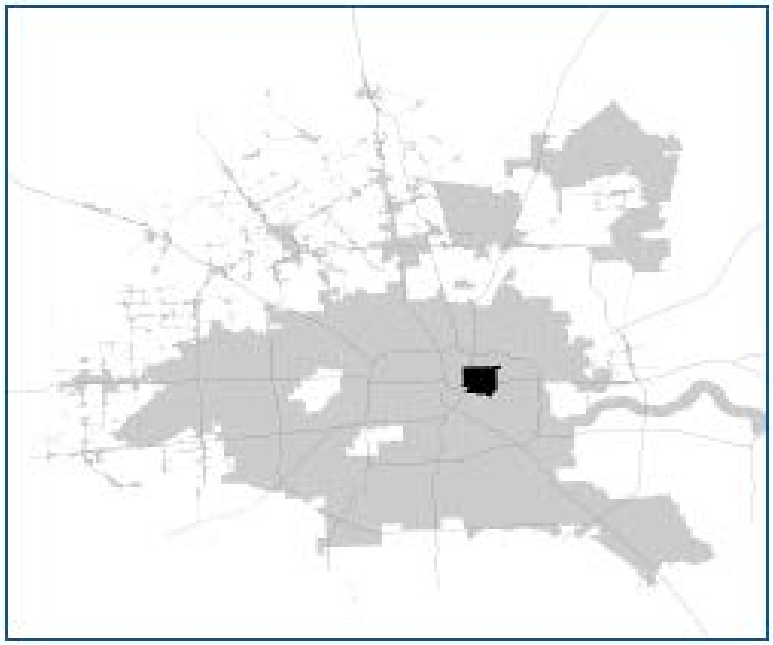
Figure 6: Super Neighborhood 57 – Pleasantville



8. Progressive Fifth Ward Community Association

Progressive Fifth Ward Community Association (Progressive Fifth Ward) is an incorporated community association serving the Greater Fifth Ward of Houston, also known as Super Neighborhood 55. The City of Houston defines Greater Fifth Ward by the geographic boundary shown below in **Figure 7**, which comprises 3,192 acres (4.99 sq. miles) in the Northeastern part of the City of Houston:

Figure 7: Location of Greater Fifth Ward in Northeast Houston

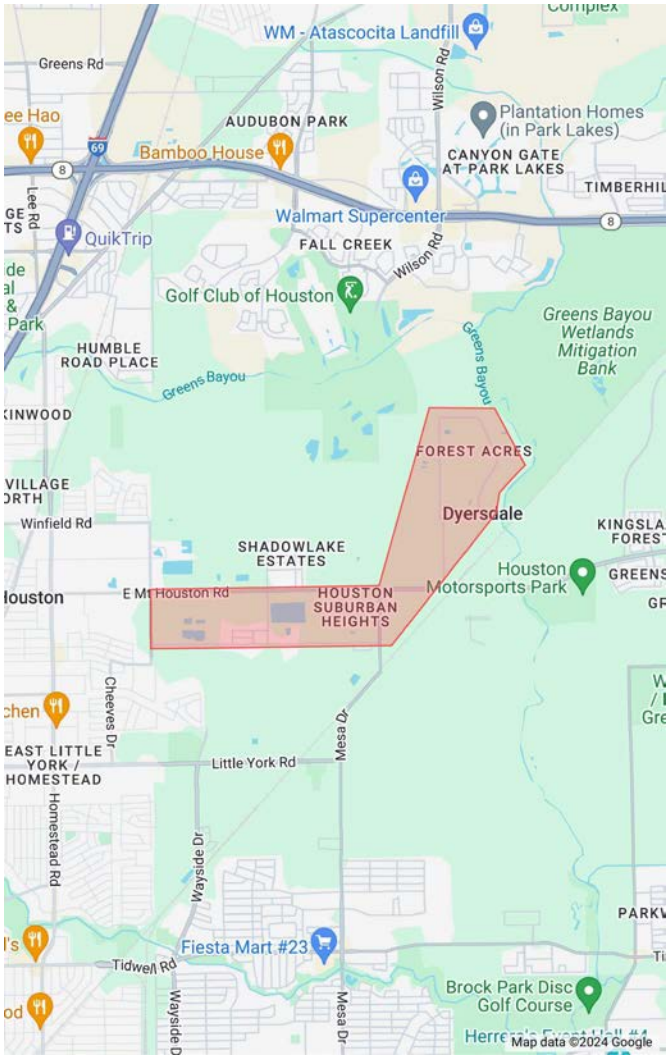


As a community association, Progressive Fifth Ward's purposes include: promoting civic engagement of residents, encouraging improvements in the appearance of public and private properties in the area, and taking concerted actions in matters pertaining to the welfare of residents in the neighborhood. Progressive Fifth Ward has been and remains active in efforts to combat local sources of pollution within the community and highlighting these issues to governmental entities.

9. Dyersforest Heights Civic Club

Dyersforest Heights Civic Club ("Dyersforest") is nonprofit civic club incorporated under the laws of the State of Texas. The group was created to promote civic and social welfare and well-being of the residents and property owners of Dyersforest Heights. Dyersforest Heights includes: Dyersdale, Forest Acres, and Houston Heights subdivisions which are all situated in the historic Dyersdale area in Houston and Harris County. Dyersforest Heights Civic Club has lead the charge for their community against harmful concrete facilities that pollute the community's air and water.

Figure 8: Dyersforest Heights Boundaries[4]

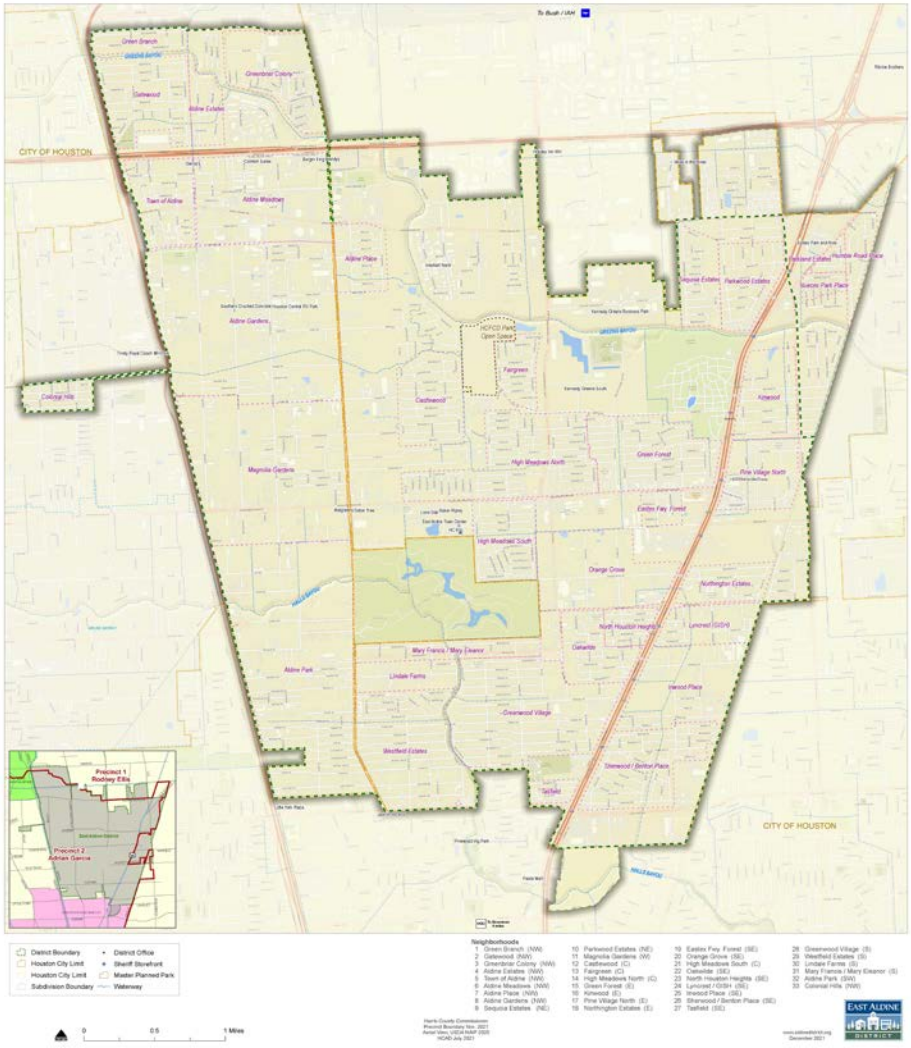


10. East Aldine Civic Association

East Aldine Civic Association is an unincorporated association formed with the purpose of promoting and supporting the well-being and improvement of the East Aldine community and its residents. The Civic Association strives to inspire greater participation in community engagement activities by developing new leaders, bringing forward community enhancement ideas and projects that are consistent with community values, and by working to improve the quality of life of the people of East Aldine and its surrounding communities. East Aldine Civic Association's current leadership has more recently focused on reforming dangerous concrete facilities which are damaging the community's air quality.

[4] Screenshot taken from Google Maps, www.google.com/maps.

Figure 9: East Aldine Management District Map



11. Houston Department of Transformation

The Houston Department of Transformation is a grassroots community-based nonprofit organization which operates in multiple neighborhoods in north-central along the Interstate 45 and Hardy Toll Road corridors, as well as in communities in Northeast Houston such as East Aldine. The organization largely operates on a project-based basis, completing projects across northern Houston to improve the health and safety of neighborhoods, as well as promote community cohesion and pride. As part of this work, the Houston Department of Transformation has previously worked with other organizations in the Houston area on developing local air monitoring networks to help gauge air quality in the area.

12. Better Brazoria - Clean Air & Water

Better Brazoria – Clean Air & Water (Better Brazoria) was formed to educate Freeport residents about environmental issues and to advocate for solutions to protect and improve air and water quality. To accomplish this mission, Better Brazoria holds community meetings to raise awareness about potentially harmful air and water pollution events in Freeport, Texas and Brazoria County. The group communicates with TCEQ and other state and local governmental entities to remain up to date on the latest developments in the area. Better Brazoria continues to engage with the public participation component of the environmental permitting process by submitting comments, and engaging in hearings on air, water, and waste permits, and submitting comments, like these, on air monitors in the region. The group's goal is to encourage protection of public health through compliance with permitting schemes and environmental laws.

B. Air Alliance Houston

Air Alliance Houston is a recognized Texas 501(c)(3) non-profit advocacy organization working to reduce the public health impacts of air pollution and advance environmental justice through applied research, education, and advocacy. Air Alliance Houston takes a strong stance against disproportionate exposure to air pollution in overburdened communities of color and lower income by focusing attention on health equity and environmental justice.

C. New Liberty Road Community Development Corporation

New Liberty Road Community Development Corporation (NLRCDC), as a Texas 501(c)(3) community development corporation, stands at the forefront of addressing pressing issues at the intersection of community development, climate change, environmental sustainability, public health, and social justice. NLRCDC based in Fifth Ward, Houston, Texas is committed to fostering positive change through applied research, education, and advocacy initiatives. NLRCDC's steadfast dedication to reducing disparities and promoting equity in environmental and social outcomes and public health initiatives. By prioritizing the well-being of overburdened communities, particularly those of color and lower income, NLRCDC exemplifies the government's commitment to fostering a more just and sustainable society. Their collaborative efforts are instrumental in advancing health equity and environmental justice for residents of Fifth Ward with community-driven initiatives in driving meaningful progress.

D. Coalition of Community Organizations

The Coalition of Community Organization's mission is to help facilitate the flow of information in order to educate, empower, and enhance the lives of individuals and families with the goal of helping them make informed decisions in an effort to obtain healthy and sustainable communities. The organization's vision is to distribute information to this generation of communities and the next. Our future goal is to become a powerbase within communities that is

politically, economically, socially, academically, and spiritually strong to increase community involvement.

E. Achieving Community Tasks Successfully (ACTS)

Achieving Community Tasks Successfully (ACTS) is a 501c3 nonprofit representing the Pleasantville and Clinton Park communities in Houston. ACTS' mission is to leverage citizen science, training, and community engagement to address climate, environmental and social justice. Its ongoing relevant projects include community air monitoring of criteria pollutants and hazardous air pollutants (HAPs), disseminating results of recently completed baseline health survey for public health and disaster preparedness planning, and stakeholder engagement with Port Houston advocating for environmental and climate justice for port communities.

F. Public Citizen

Public Citizen is a nonprofit consumer advocacy organization that champions the public interest in the halls of power. We defend democracy, resist corporate power and work to ensure that government works for the people – not for big corporations. Public Citizen's Texas office works to protect the health and prosperity of our communities and families. We support a just energy transition that creates green jobs, living wages, and a strong economy.

II. PLACEMENT OF AIR MONITORS IN ENVIRONMENTAL JUSTICE COMMUNITIES

Environmental justice is an ongoing struggle to remedy environmental discrimination in this country. The EPA defines environmental justice as follows:

> Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. EPA has this goal for all communities and persons across this Nation. It will be achieved when everyone enjoys the same degree of protection from environmental and health hazards and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.[5]

The EPA defines "fair treatment" as ensuring "that no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the

[5] U.S. Environmental Protection Agency, Environmental Justice-Related Terms As Defined Across the PSC Agencies (05/13/2013), https://www.epa.gov/sites/production/files/2015-02/documents/team-ej-lexicon.pdf.

negative environmental consequences of industrial, governmental, and commercial operations of programs and policies."[6]

Environmental discrimination and the uneven spread of environmental harms and risks have historically been evident in the process of selecting and building environmentally hazardous sites, including waste disposal, manufacturing, and energy production facilities. The locations of busy roads and railroads follow a similar pattern. The siting of such hazardous infrastructure in communities of color and/or low-income communities has had a disproportional negative impact on the overall health and well-being of those communities.

TCEQ must recognize the inclusion of "government…programs and policies" in the definition of fair treatment. A well designed and inclusive air monitoring program can be an effective tool to identifying and alleviating risks and harms. An air monitoring program which does not sufficiently monitor the many air pollutants released into environmental justice communities has the potential to perpetuate the challenges faced by those communities. In other words, TCEQ should view the 2024 AMNP as an important opportunity to fulfill TCEQ's obligations under Title VI of the Civil Rights Act of 1964 as well as basic tenets equal protection.

Additionally, TCEQ has an obligation to monitor in "at-risk" communities, differently than those communities which are not categorically "at-risk."[7] According to the EPA, an "at-risk" community is defined as a community with an increased risk of related health effects caused by pollution sources of concern.[8] Those communities identified as "at-risk" should have monitoring stations sited near sources. Importantly, the communities represented in these comments are categorically at-risk.

The EPA's air monitoring regulations similarly require TCEQ consider "vulnerable and susceptible populations" in placement of monitors.[9] According to EPA research:

> Residents of low-income neighborhoods and communities may be more vulnerable to air pollution because of proximity to air pollution sources such as factories, major roadways and ports with diesel truck operations. They also may be more susceptible to air pollution because of social and economic factors.[10]

---

[6] *Id.*
[7] *See e.g.* 40 C.F.R. 58.10(b)(14).
[8] U.S. Environmental Protection Agency, Air Monitoring for Fine Particle Pollution ($PM_{2.5}$) Fact Sheet, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-monitoring-fact-sheet.pdf
[9] *See e.g.* 40 C.F.R. 58.10(b)(12).
[10] U.S. Environmental Protection Agency, EPA Research: Environmental Justice and Air Pollution, https://www.epa.gov/ej-research/epa-research-environmental-justice-and-air-pollution#

The communities described below all fit squarely into these agency definitions of "at-risk" and "vulnerable and susceptible." The represented communities are all proximate to air pollution sources and face social and economic factors which raise health and healthcare challenges.

A. West Port Arthur

West Port Arthur is a historically Black and low-income neighborhood located in south/southwest Port Arthur, Texas. West Port Arthur is a US EPA Region 6 "Environmental Justice Showcase Community" due to its legacy of environmental and public health challenges.[11] The neighborhood is home to "many facilities including chemical plants, refineries and a hazardous waste incinerator."[12]

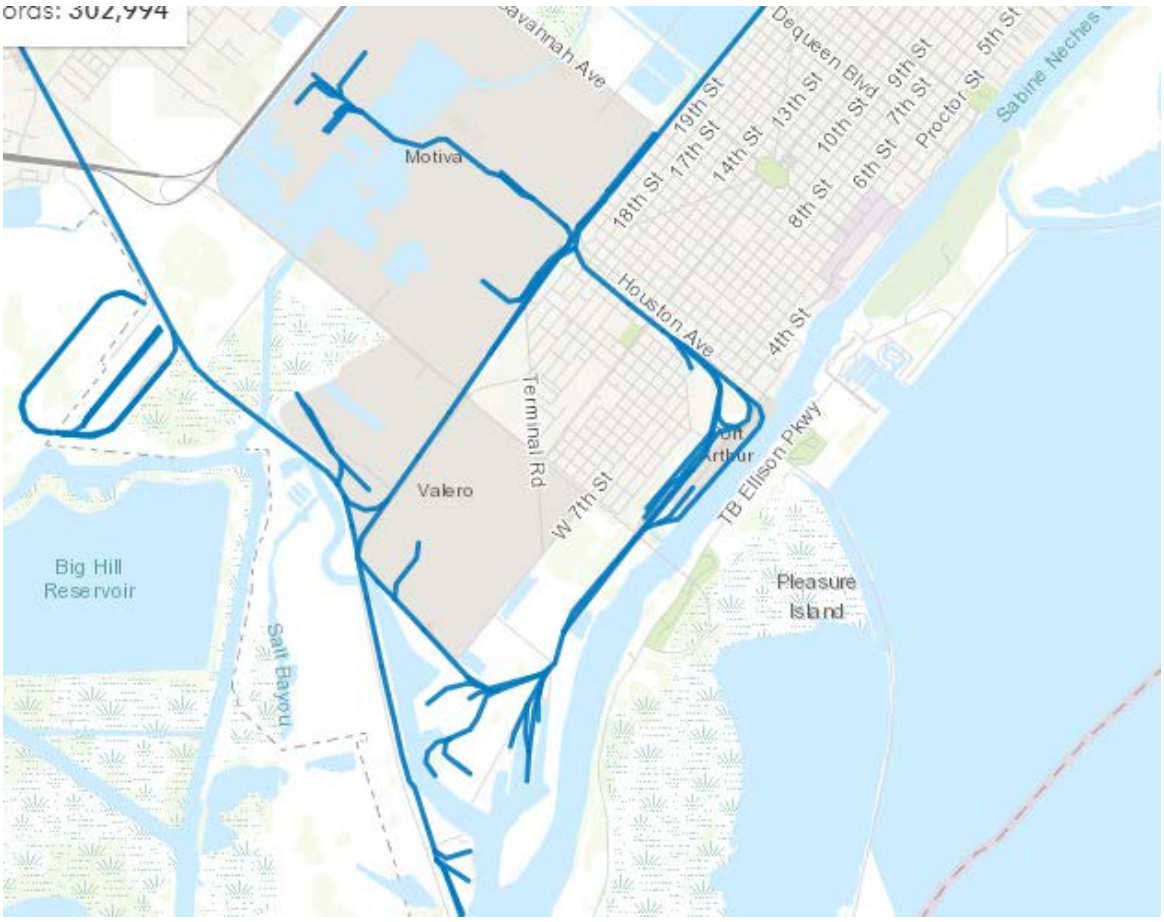
Residential West Port Arthur, also known as the "West Side" of Port Arthur, is a neighborhood that is predominantly a low-income, community of color. The neighborhood is bisected and surrounded by major industrial facilities, many of which are among Texas' largest emitters of criteria pollutants. **Figure 10** shows a satellite image of the area. Residential West Port Arthur can be seen along the right side of the image while the areas numerous, and massive, industrial cites largely appear white or grey across the center of the image. In addition, the Port of Beaumont and railways cut along the Sabine Neches Canal to the left of residential West Port Arthur. Point sources plus truck, rail, and ship traffic all combine to make West Port Arthur one of the most vulnerable communities to air pollution in Texas.

[11] U.S. Environmental Protection Agency, Region 6 EJ Showcase Community: Port Arthur, TX, https://archive.epa.gov/environmentaljustice/grants/web/html/ej-showcase-r06.html.
[12] *Id.*

***Figure 10: Satellite Image of Residential and Industrial West Port Arthur*[13]**

[13] Screenshot from Google Maps, www.google.com/maps.

Figure 11: Railroads in West Port Arthur[14]



The following two figures, **Figure 12** and **Figure 13**, show the prevalence of people of color in Port Arthur as a national percentile, and the prevalence of low-income households as a national percentile. In each figure, the areas with red (the highest rates of poverty of people of color) are West Port Arthur. The figures show that West Port Arthur has one of highest rates of poverty and one of the highest proportions of people of color in the entire country.

[14] U.S. Department of Transportation, Bureau of Transportation Statistics, North American Rail Network Lines, https://geodata.bts.gov/datasets/usdot::north-american-rail-network-lines/about.

***Figure 12: People of Color in Port Arthur*[15]**

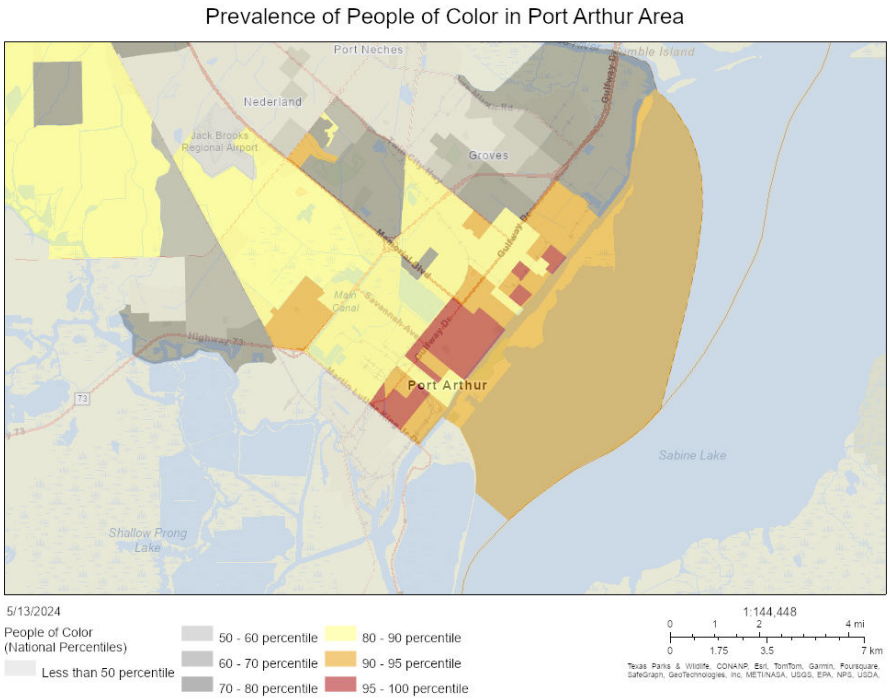
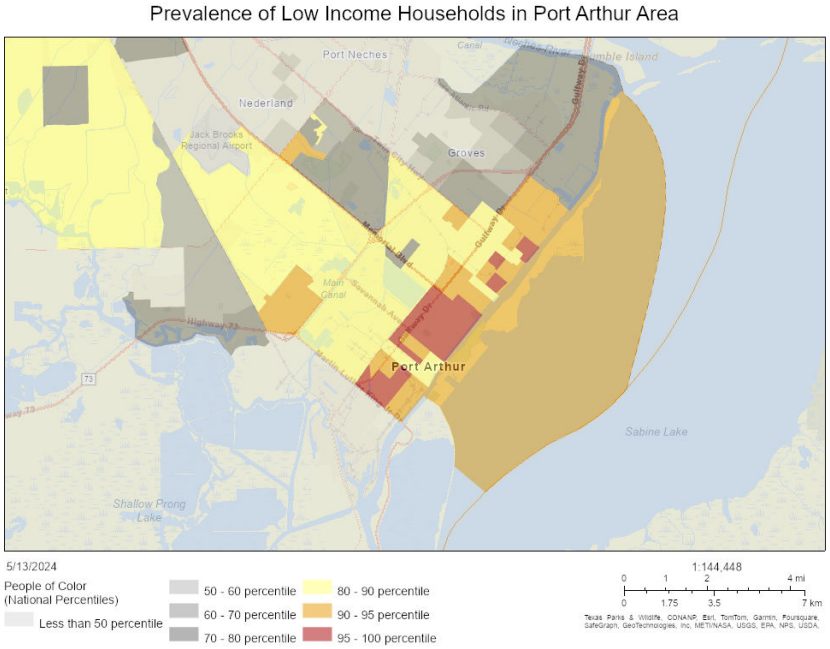


***Figure 13: Low Income Households in Port Arthur*[16]**

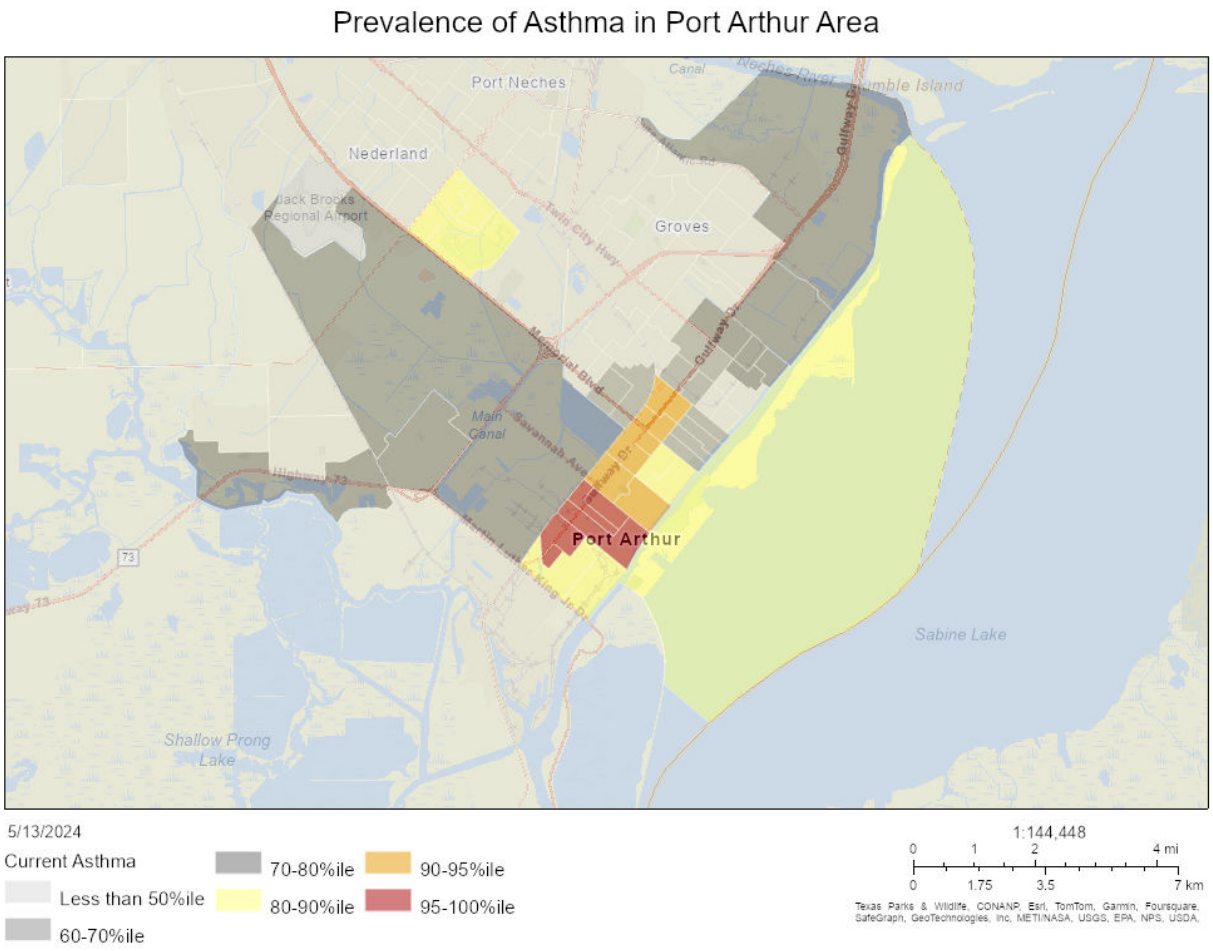


[15] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

[16] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

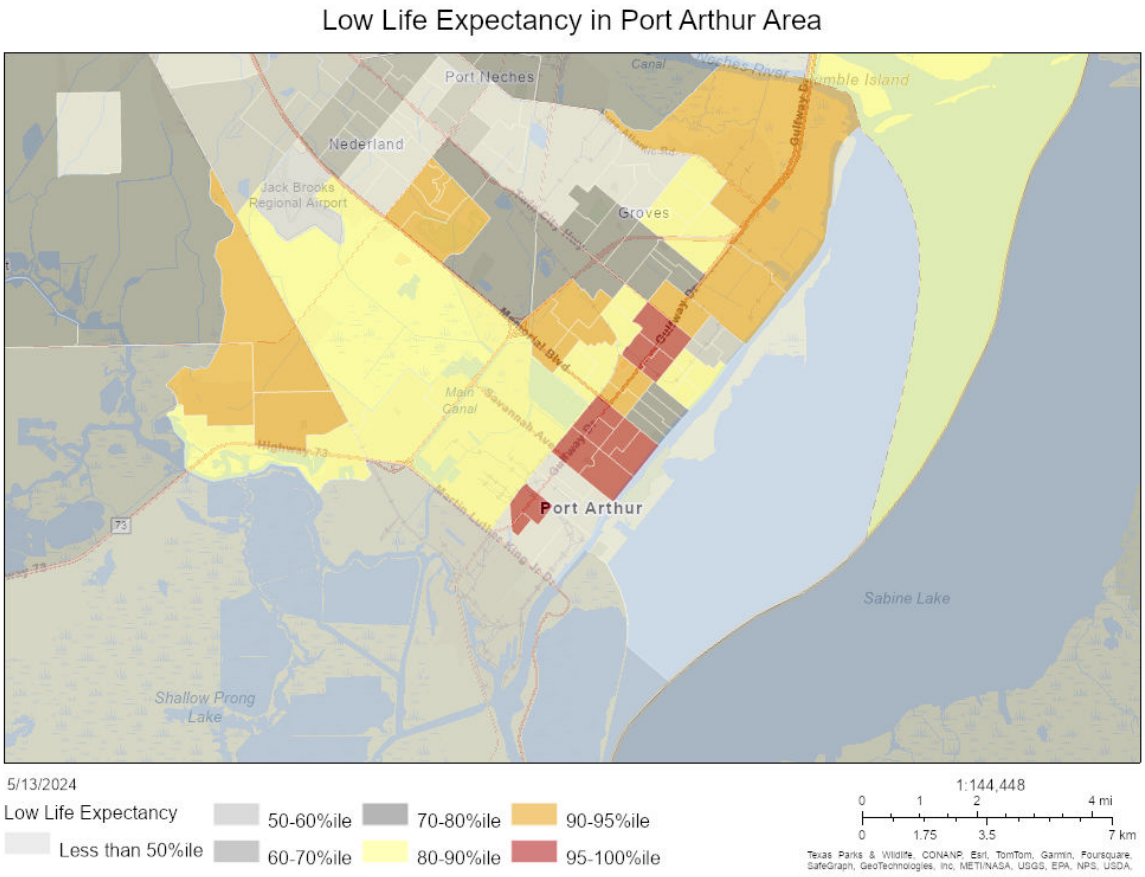
It is not surprising that West Port Arthur faces significant health challenges. The community has, for example, high rates of asthma and notably low life expectancy. Most of West Port Arthur is in the 95th or higher national percentile for asthma. West Port Arthur is also mostly in the 95th or higher national percentile for low life expectancy.

Figure 14: Prevalence of Asthma in Port Arthur[17]



[17] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

***Figure 15: Prevalence of Low Life Expectancy in Port Arthur*[18]**



It is crucial that West Port Arthur have accurate and appropriate air monitoring due to its vulnerability and susceptibility to air pollution harms. PACAN maintains and reiterates its longstanding concerns about SO_2 monitoring near the Oxbow Calcining facility located just south and upwind of residential West Port Arthur.

B. Beaumont

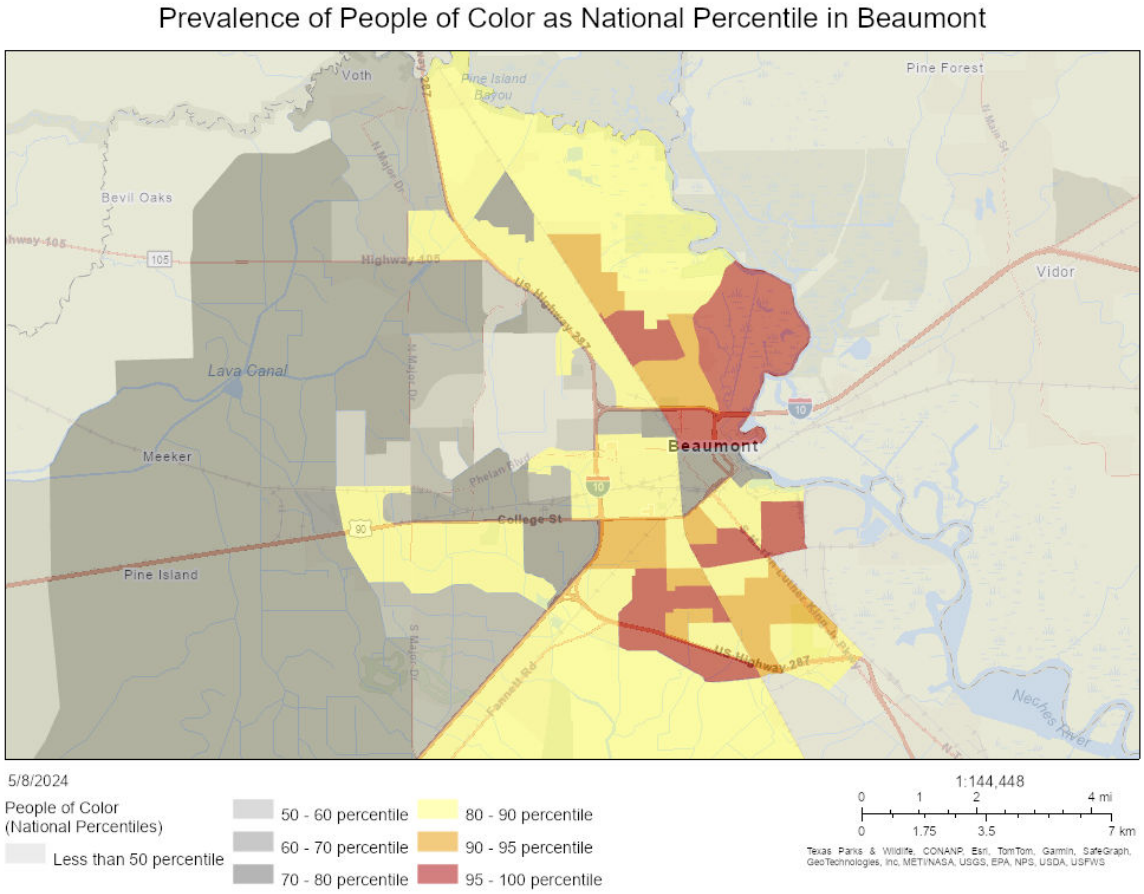
Together, WMP and SECPGHCA represent Beaumont's "East Side", the historically lower income and majority-minority portion of Beaumont located east of Interstate 10 and U.S. Highway 96. Beaumont is the historic and spiritual home to Texas' oil and gas industry—Spindletop was struck in 1901 and the city is still home to oil and gas production, as well as multiple major industrial facilities and associated infrastructure. For example, Beaumont's East Side is home to one of the largest petrochemical facilities in the world, Exxon Mobil's vast

[18] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

Beaumont refining complex.[19] SECPGHCA's concern goes well past Exxon Mobil, including emissions related to other major industrial facilities, the Port of Beaumont, the areas many railroads, and the busy Interstate 10 corridor through the center of the city.

Beaumont can largely be divided into "west" and "east" by Interstate 10 and US-Highway 96. There are stark income, race, and health related divides between these two sides of town. The following figures, **Figure 16, Figure 17, and Figure 18**, show the prevalence of people of color, households below the poverty level, and the prevalence of asthma. Beaumont's East Side is largely people of color, living below the poverty level, and face elevated health challenges such as high rates of asthma, for example.

Figure 16: People of Color as National Percentile in Beaumont[20]



[19] ExxonMobil, Beaumont Operations, https://corporate.exxonmobil.com/locations/united-states/beaumont-operations.
[20] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

***Figure 17: Low Income Households as National Percentile in Beaumont*[21]**

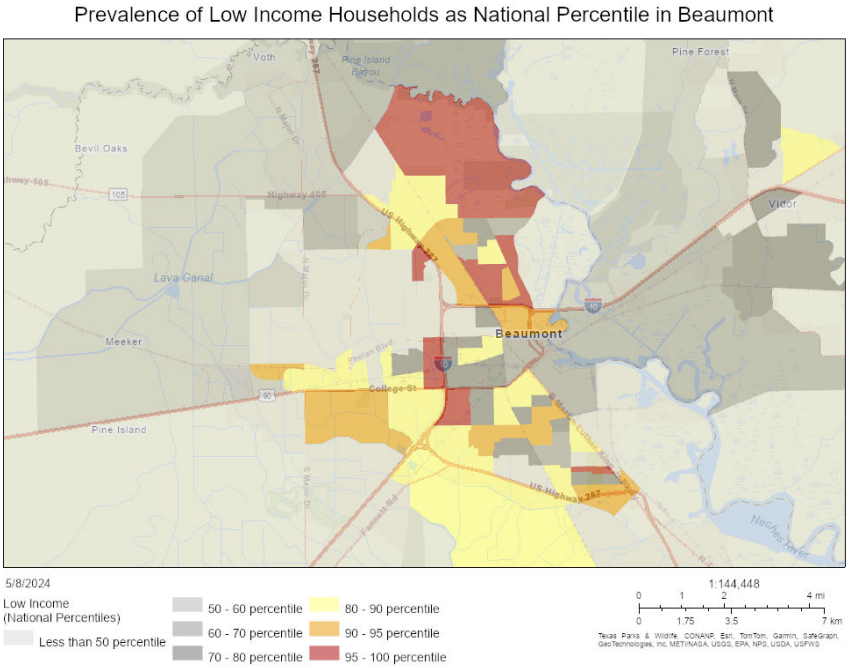
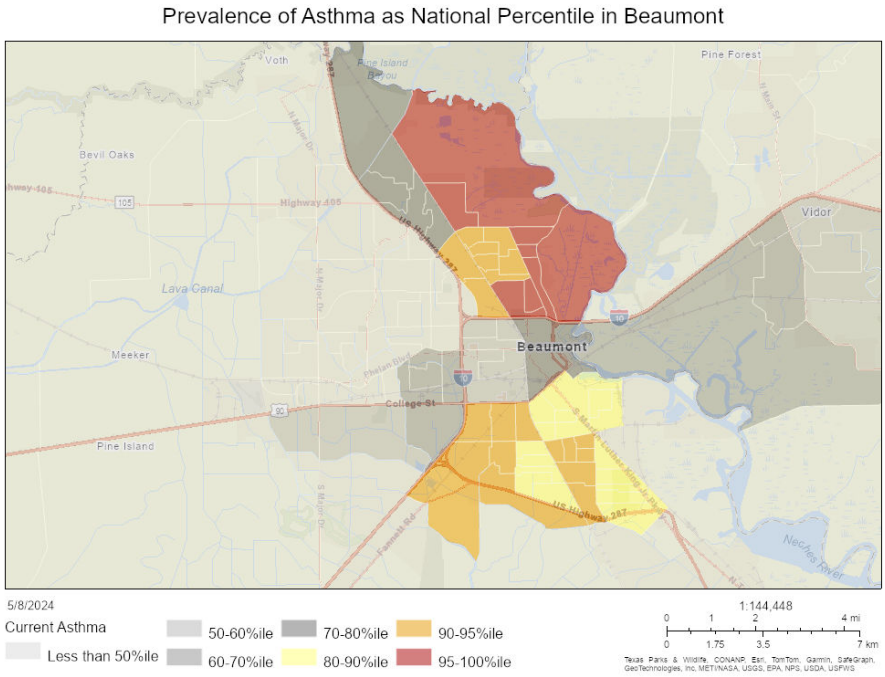


***Figure 18: Asthma Prevalence as National Percentile in Beaumont*[22]**

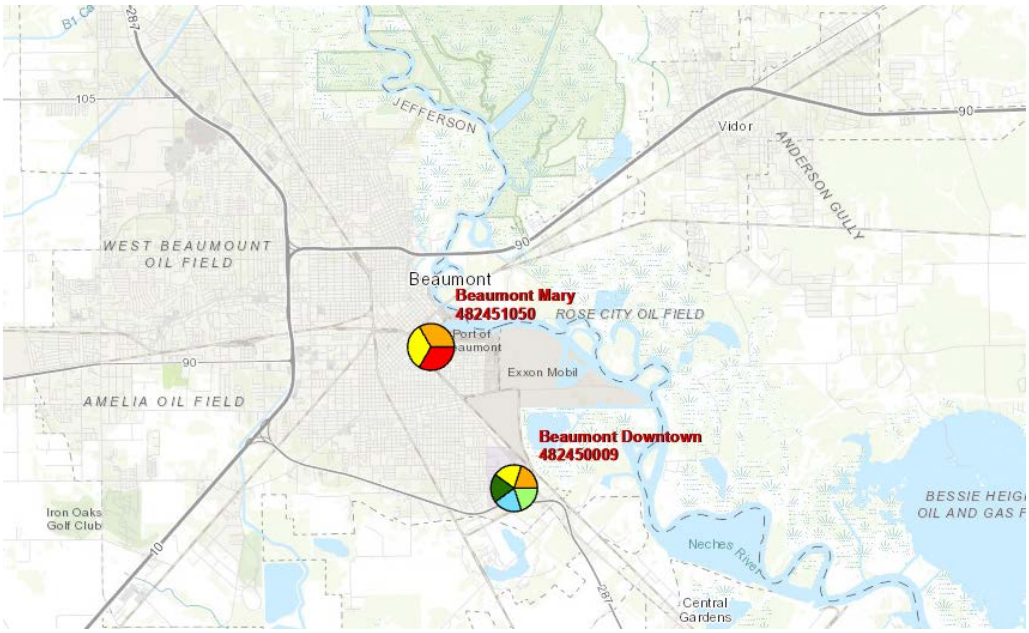


[21] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

[22] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

In short, Beaumont's East Side faces significant environmental justice concerns. For the purposes of these comments, SECPGHCA and WMP start by pointing out the general lack of air monitoring in the heart of Beaumont. The "Beaumont Downtown" monitor is not located in central, downtown Beaumont but is rather located on Beaumont's far south side, on the edge of urban Beaumont. The "Beaumont Mary" monitor is in central Beaumont, near Charlton Pollard, but only measures hydrogen sulfide and VOCs. While this is good, WMP and SECPGHCA believe NO_x and CO monitoring is warranted under the federal air monitoring regulations at the Beaumont Mary site or a near-road monitor along the Interstate 10 corridor on Beaumont's East Side.

Figure 19: Location of TCEQ Air Monitors in Beaumont[23]



C. Pasadena and Surrounding Communities near the Houston Ship Channel

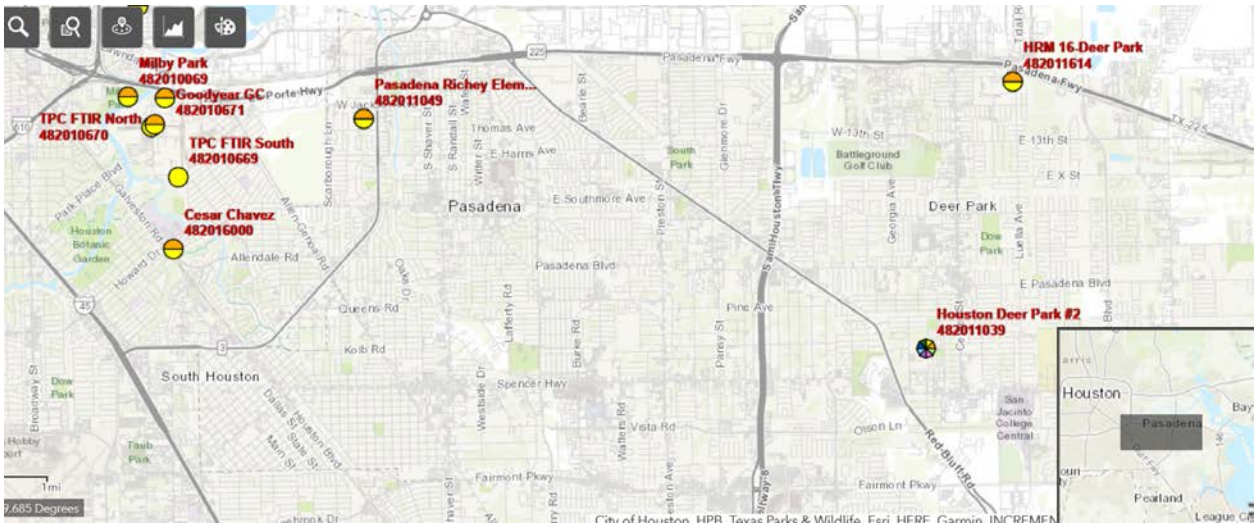
As shown below in **Table 1** and **Figure 20**, TCEQ only has one air monitor in the City of Pasadena, Pasadena Richey Elementary (#482011049), a VOC monitor located at 610 2/3 South Richey Street, Pasadena, Texas. This monitor is insufficient for monitoring air quality for Pasadena residents for a number of reasons.

TABLE 1: PASADENA AIR MONITOR

EPA Site No.	Monitor Name	Location	Pollutant(s) Monitored
482011049	Pasadena Richey Elementary School	610 2/3 South Richey Street	VOCs

[23] Texas Commission on Environmental Quality, Air Monitoring Sites, GeoTAM Map Viewer, https://www.tceq.texas.gov/airquality/monops/sites/air-mon-sites.

Figure 20: Air Monitors in Pasadena[24]



First, Pasadena is a city covering 44.74 square miles with a population of 147,662 in 2022.[25] Pasadena is the 20th most populous city in Texas, and the second largest city in Harris County, Texas. Given the city's large size, the Pasadena Richey Elementary monitor, located in the upper northwestern corner of Pasadena, cannot accurately capture air quality for much of the city. By comparison, the neighboring city of Deer Park, Texas is a quarter of Pasadena's size in area (10.57 square miles) and population (33,468),[26] yet it has two monitors: (1) a VOC monitor, HRM 16-Deer Park (#482011614), and (2) a more comprehensive monitor, Houston Deer Park #2 (#482011039), which tracks VOCs, nitrogen, $PM_{2.5}$ and PM_{10}, O_3, SO_2, NO_2, NO_y, CO, and carbonyl. Both Pasadena and Deer Park are highly industrial regions; however, Deer Park has a monitor for every 5.285 square miles (or a monitor per 16,734 people), whereas Pasadena has one monitor for 44.74 square miles (or a monitor per 147,662 people). Even if the TCEQ does not install an air monitor to cover every five square miles in Pasadena, the discrepancy between Pasadena and Deer Park demonstrates that one air monitor is not enough.

Second, the Pasadena Richey Elementary monitor's location likely is deficient because the wind in Pasadena often blows from the southeast. As **Figure 21** shows, many facilities that are part of the U.S. EPA's Toxics Release Inventory (TRI) program in Pasadena are in the southeastern part of the city. TCEQ should place another air monitor in Pasadena that can better capture the air quality impacts of these facilities specifically on Pasadena residents.

[24] Texas Commission on Environmental Quality, Air Monitoring Sites, GeoTAM Map Viewer, https://www.tceq.texas.gov/airquality/monops/sites/air-mon-sites.
[25] U.S. Census Bureau, Quick Facts, Pasadena city, Texas, https://www.census.gov/quickfacts/pasadenacitytexas.
[26] U.S. Census Bureau, Quick Facts, Deer Park, city, Texas; Pasadena city, Texas, https://www.census.gov/quickfacts/fact/table/deerparkcitytexas,pasadenacitytexas/PST045219.

Figure 21: Wind Direction in Pasadena

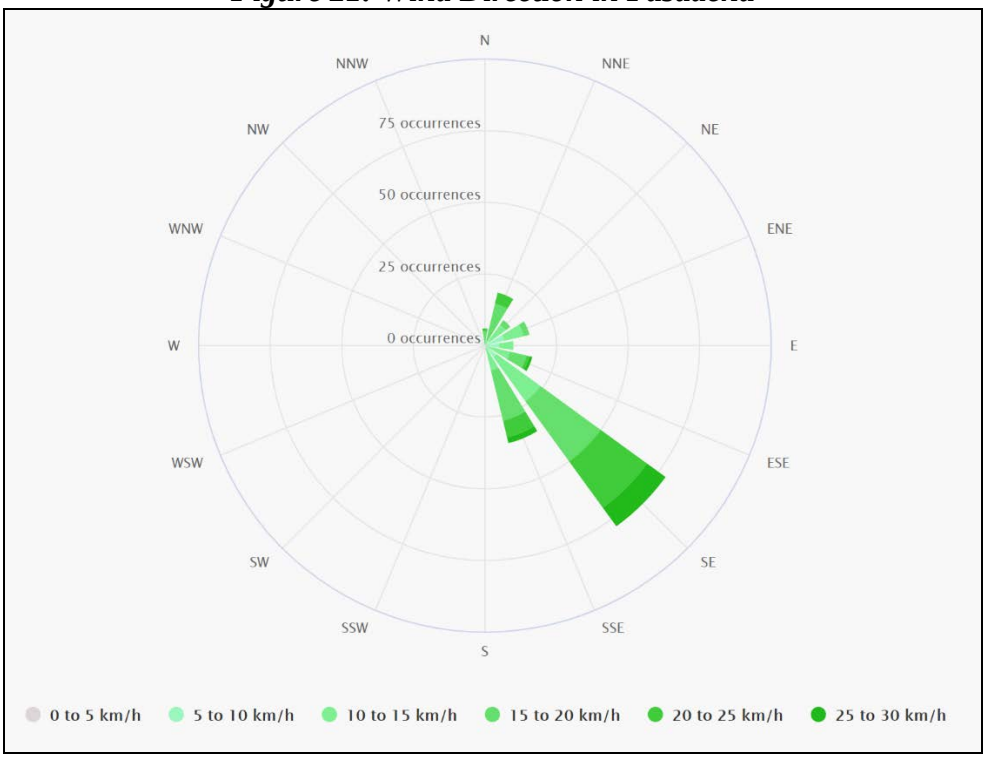
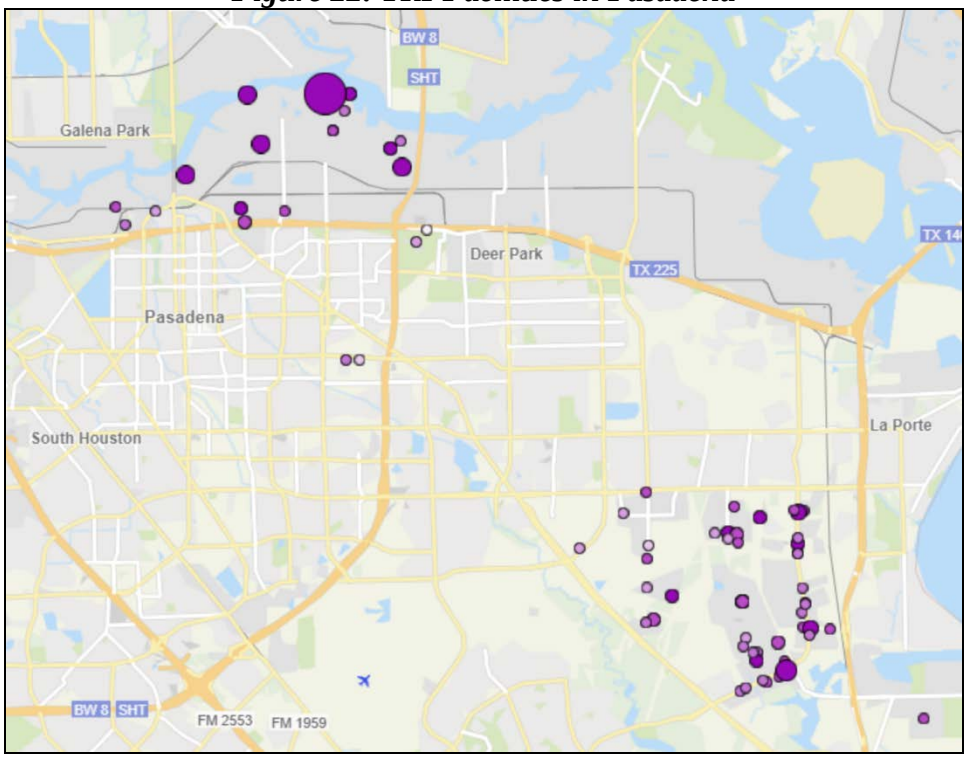


Figure 22: TRI Facilities in Pasadena



Third, Pasadena Richey Elementary only tracks VOCs. There are at least 62 facilities located in Pasadena, Texas registered with the EPA and regularly making TRI reports.[27] These facilities report not only VOCs, but also other chemicals, including ammonia and heavy metal compounds—such as cobalt, nickel, and zinc compounds. In addition, other types of facilities, including five concrete batch plants, emit particulate matter. TCEQ should install additional monitors in Pasadena that can better capture non-VOC chemicals and particulate matter.

CPC recognizes that there are other air monitors in municipalities surrounding Pasadena, such as Deer Park, Houston, Shore Acres, Seabrook, and League City that measure other air pollutants in addition to VOCs. However, these monitors listed in Table 2 do not reflect the air pollutants inside the Pasadena community. Accordingly, the presence of monitors around Pasadena do not guarantee that air quality is being adequately monitored in Pasadena, nor that the public has a complete picture of air pollutants in Pasadena.

TABLE 2: AIR MONITORS AROUND HOUSTON SHIP CHANNEL

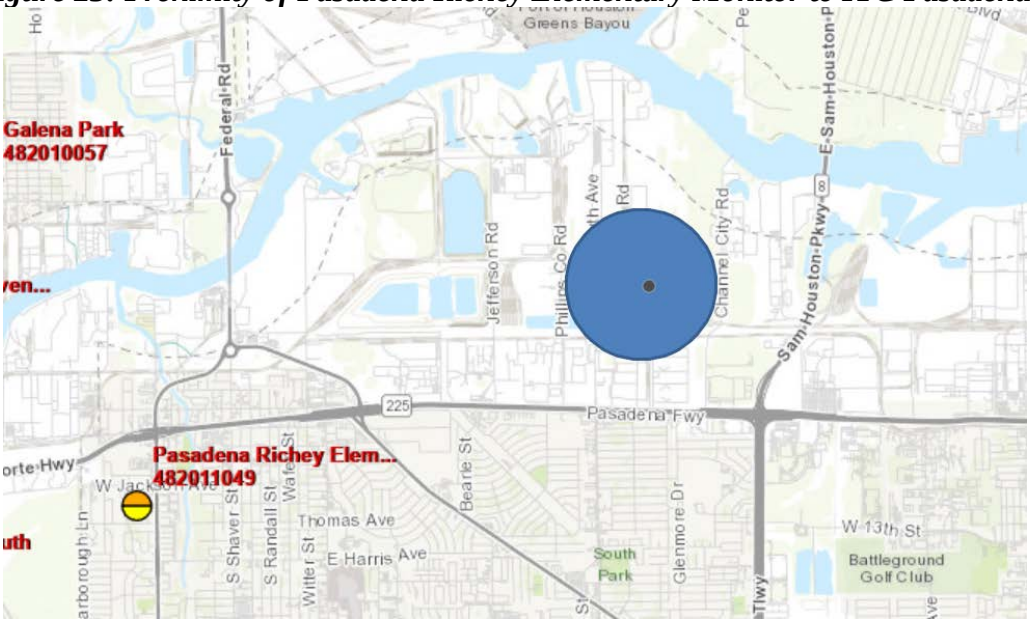
EPA Site No.	Monitor Name	Location	Pollutant(s) Monitored
482016000	Cesar Chavez	4829A Galveston Rd (Houston)	VOC
482011035	Clinton	9525 1/2 Clinton Dr. (Houston)	NO_x, O_3, $PM_{2.5}$, PM_{10}, SO_2, VOC
482010671	Goodyear GC	9728 West Road (Houston)	VOC
482010673	Goodyear Houston Site #2	2000 Goodyear Dr. (Houston)	VOC
482010062	Houston Monroe	9726 1/2 Monroe St. (Houston)	O_3, PM_{10}
482010307	Manchester East Avenue N	9415 East Avenue N (Houston)	VOC
482010069	Milby Park	2201A Central St. (Houston)	VOC
482010416	Park Place	7421 Park Place Blvd (Houston)	NO_x, O_3, SO_2
482010669	TPC FTIR South	8600 Park Place Blvd (Houston)	VOC
482011039	Houston Deer Park #2	4514 1/2 Durant St. (Deer Park)	O3, $PM_{2.5}$, SO_2, VOC
482010057	Galena Park	1713 2nd St.	VOC

[27] U.S. Environmental Protection Agency, 2022 TRI Factsheet: City – Pasadena, TX (2022 dataset), https://enviro.epa.gov/triexplorer/tri_factsheet.factsheet?pzip=&pstate=TX&pcity=PASADENA&pcounty=&pyear=2022&pParent=TRI&pDataSet=TRIQ1.

TABLE 2: AIR MONITORS AROUND HOUSTON SHIP CHANNEL			
EPA Site No.	**Monitor Name**	**Location**	**Pollutant(s) Monitored**
		(Galena Park)	
482010061	Shore Acres	3903 ½ Old Hwy 146 (La Porte)	VOC
482011050	Seabrook Friendship Park	4522 Park Rd (Seabrook)	NO_x, O_3, $PM_{2.5}$
482011614	HRM 16-Deer Park	600-658 Luella Ave (Deer Park)	VOC

Fourth, even though the Pasadena Richey Elementary monitor tracks VOCs, the monitor does not ensure accurate monitoring for the many facilities in Pasadena emitting VOCs. For example, CPC has commented on permit applications submitted by Intercontinental Terminals Company's Pasadena facility (ITC Pasadena), located at 1030 Ethyl Road, Pasadena, Texas. In 2021, TCEQ approved ITC Pasadena's New Source Review permit, which treated the facility as a minor source for VOCs, even though the aggregate VOC emissions from the facility, as a whole, would exceed the major source threshold. Given ITC Pasadena's VOC emissions, CPC would expect the TCEQ to monitor the facility. However, the Pasadena Richey Elementary monitor is five miles away from ITC Pasadena. Moreover, the monitor is located southwest of ITC Pasadena, which means the monitor is not in the range of prevailing winds.

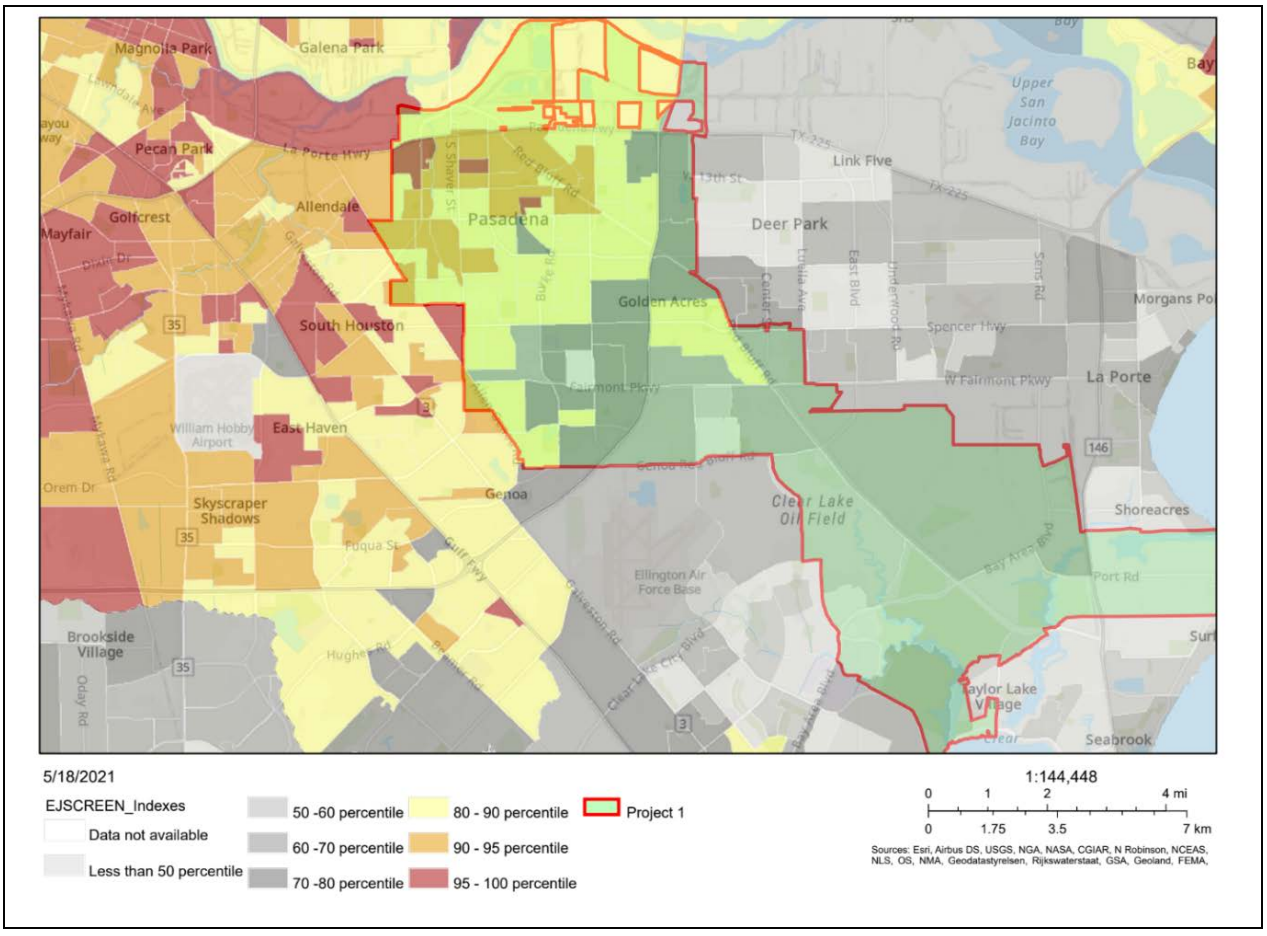
Figure 23: Proximity of Pasadena Richey Elementary Monitor to ITC Pasadena[28]



[28] Texas Commission on Environmental Quality, Air Monitoring Sites, GeoTAM Map Viewer, https://www.tceq.texas.gov/airquality/monops/sites/air-mon-sites.

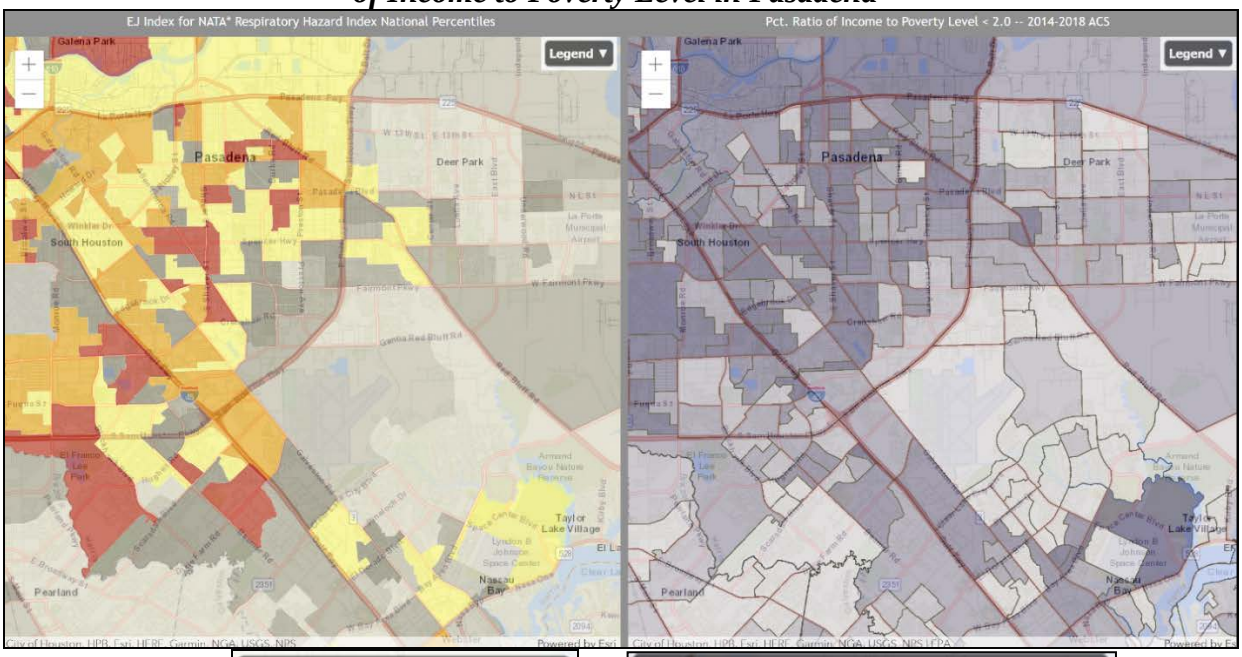
Finally, Pasadena residents form an environmental justice community surrounded by hazards from existing and new facilities regulated by TCEQ. As **Figure 24** below shows, most northern Pasadena residents are people of color and low-income. Pasadena residents are in the 85th percentile nationally for being at risk of air toxics cancer; 98th percentile for Risk Management Plan site proximity—or proximity to facilities that use extremely hazardous substances; and 86th percentile for exposure to higher levels of $PM_{2.5}$ pollution. By comparison, the residents of neighboring Deer Park, which has two air monitors, are not an environmental justice community. TCEQ must ensure stronger air monitoring in Pasadena that recognizes this environmental justice community and protects Pasadena residents who bear disproportionate air pollution harms.

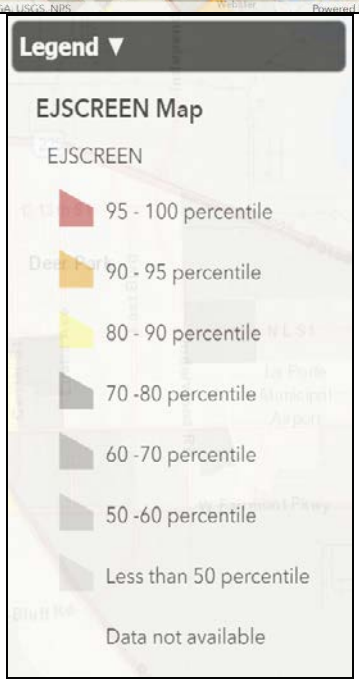
Figure 24: EJScreen Map of Pasadena by People of Color[29]

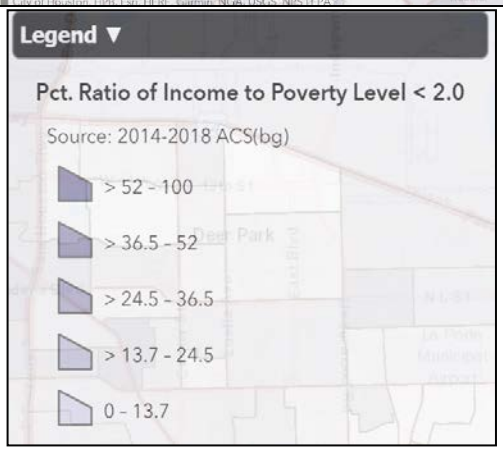


[29] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

Figure 25: Side-by-Side Maps Comparing the Respiratory Hazard Index with the Ratio of Income to Poverty Level in Pasadena[30]

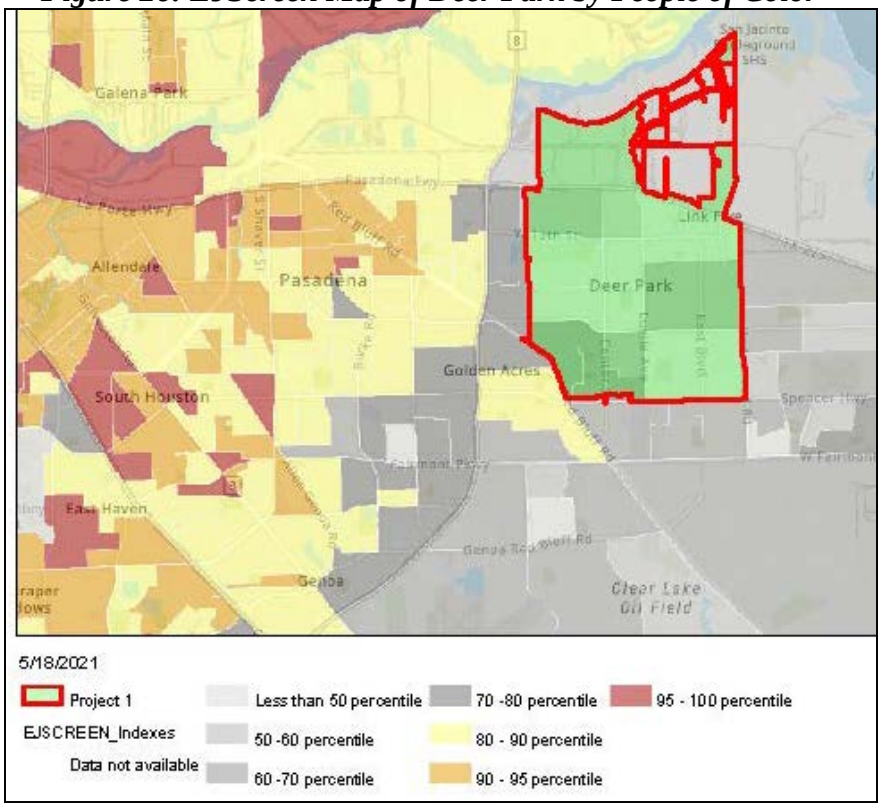






[30] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

Figure 26: EJScreen Map of Deer Park by People of Color[31]



***

The 2024 Draft Plan does not propose any additional air monitors for Pasadena. For the reasons mentioned above and further explained in Section IV, TCEQ should site additional air monitors in Pasadena.

D. North and Northeast Houston

For purposes of these comments, North and Northeast Houston Neighborhoods refers to several super neighborhoods and areas of Houston, including Super Neighborhood 48, Super Neighborhood 49/50, East Aldine, Dyersforest Heights Civic Club, and areas served by the Houston Department of Transformation.

Aggregate Facilities are Concentrated in North and Northeast Houston Causing Concerns about Significant Exposures to Particulate Matter Pollution.

The proliferation of concrete batch plants and other concrete facilities remains a significant threat in North and Northeast Houston. According to the TCEQ's February 2022 presentation to the Houston Galveston Area Council PM Advance Committee, there are 24

[31] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

registered aggregate production operations in Harris County[32]—not to mention all the potentially unregistered aggregate facilities. These aggregate facilities are disproportionately located in North and Northeast Houston.[33] Ensuring that there is adequate monitoring in the North and Northeast Houston Neighborhoods is important to determine not only whether these facilities are in compliance with their permits—but also—monitor the impacts on human heath in this area resulting from the number of facilities already permitted in the North and Northeast Houston Neighborhoods. The table below illustrates how numerous these sources of PM pollution are in North and Northeast Houston by showing ***some*** of the permitted concrete batch plants in North and Northeast Houston.

Table 3: Permitted Concrete Batch Plants in Harris County[34]

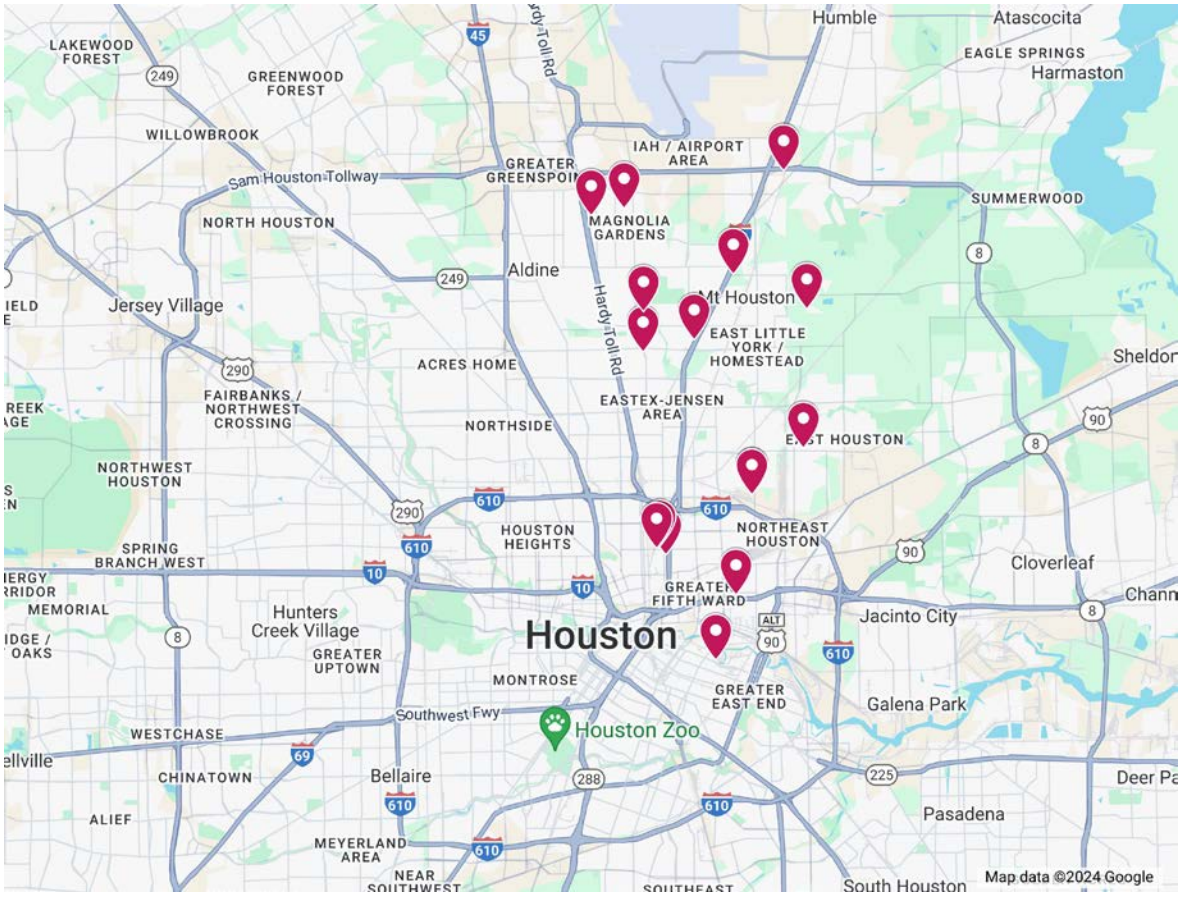
Permit No.	Permit Type	Legal Name	Physical Location (Harris County)	Impacted Community
25243	2009 Permit by Rule	Southern Star Concrete Inc	1123 Goodnight Trail	Greater Greenspoint
78606	2012 Standard Permit	Integrity Ready Mix Concrete LLC n/k/a Yellow Jacket Readymix	2219 Hartwick Rd	East Aldine
116476	2012 Standard Permit	Texas Concrete Enterprise, L.L.C./ Tex Con Ready Mix #3	3315 Carr Street	Fifth Ward
121798	2012 Standard Permit	Texas Concrete Enterprise, L.L.C. ./ Tex Con Ready Mix #2	3506 Cherry Street	Fifth Ward
122677	2012 Standard Permit	CEMEX Construction Materials South, LLC	5307 Navigation Blvd	East Aldine

[32] Texas Commission on Environmental Quality, HGAC $PM_{2.5}$ Presentation (February, 2022), at 14.
[33] Houston-Galveston-Brazoria (HGB) $PM_{2.5}$ Advance Path Forward Update (2019) at 36-37.
[34] Texas Commission on Environmental Quality, TCEQ New Source Review ("NSR") Permit Search for Concrete Batch Plant Standard Permits, TCEQ - NSR, TV and CapTrade Searchs (texas.gov); filter Region: Harris, filter Unit Rule: Concrete Batch Plants.

Permit No.	Permit Type	Legal Name	Physical Location (Harris County)	Impacted Community
131665	2012 Standard Permit	Five Star Ready Mix, LLC	8001 Ley Rd	Super Neighborhood 49/50
135498	2012 Standard Permit	CEMEX Construction Materials South, LLC	1902 Rothwell Street	Fifth Ward
136479	2012 Standard Permit	Texan Concrete Enterprise Ready Mix, Inc.	Approximately 0.5 Miles North From The Intersection Of 610 And Homestead Road	Super Neighborhood 49/50
136883	2012 Standard Permit	Houston Ready Mix, LLC / SMYRNA	5220 Winfield Road	Dyersforest / East Aldine
139955	Concrete Crushing Permit (NSR)	Cherry Crushed Concrete	9200 Winfield Road	Dyerforest
148312	2012 Standard Permit	Baker Ready Mixed Concrete, LLC	1731 Peach Leaf St	East Aldine
150603	2012 Standard Permit	Texan Concrete Enterprise Ready Mix, Inc.	6001 Homestead Rd	Super Neighborhood 48
89909	2012 Standard Permit	Wilbert Vaults Of Houston, L.L.P.	10645 Aldine Westfield Rd	East Aldine
138309	2021 Standard Permit	CemTech Concrete Ready Mix Inc	3116 Jensen Dr	Fifth Ward
157195	2022 Standard Permit	Rocket Materials LLC	914 Pinafore Ln	East Aldine

Permit No.	Permit Type	Legal Name	Physical Location (Harris County)	Impacted Community
164280	2021 Standard Permit	Always Ready Concrete, LLC	6510 N Sam Houston Pkwy E	East Aldine
167400	2021 Standard Permit	Cs Concrete Ready Mix Inc.	7515 Furay Rd	Super Neighborhood 49/50
167453	2021 Standard Permit	Avant Garde Construction Co.	10945 Eastex Fwy	East Aldine

Figure 27: Map of Some of the Concrete Batch Plants in Northeast Houston



Not only do the above concrete batch plants affect the North and Northeast Neighborhoods of Houston, but the community of Dyersforest is inundated with particulate matter from Cherry Crushed Concrete—a 7,947,739 square foot Concrete Crushing Plant, pug mill, and soil stabilization plant.[35] And the adjacent neighborhood, East Aldine, hosts 7 different concrete facilities. The Greater Greenspoint neighborhood is home to several concrete batch plants, adding to air quality concerns from the area's heavy vehicle traffic.

***Figure 28: East Aldine's Exposure to Concrete Batch Plants*[36]**

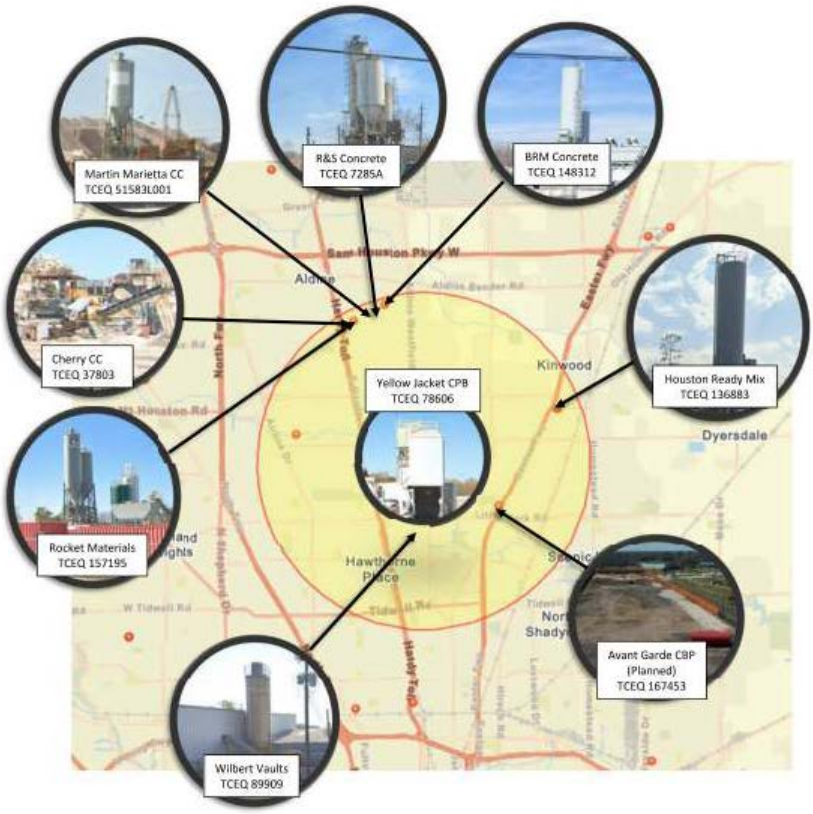
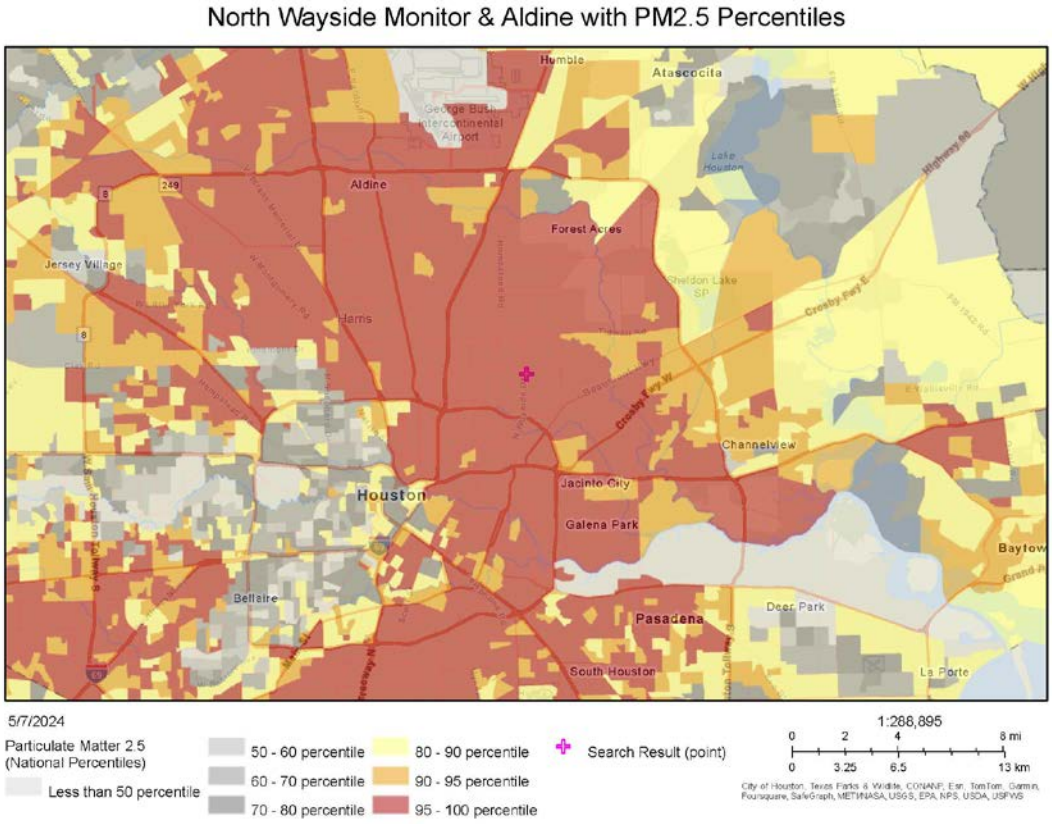


Figure 4: **Map showing the proximity of 7 CBPs and 2 concrete crushing facilities within a 3-mile radius in the East Aldine Community of Harris County.**

Aldine is particularly inundated with concrete batch plants, and the community has significant concerns about particulate matter. However, the closest monitor to Aldine and Dyersforest is North Wayside. The Map below illustrates (1) Aldine's and Dyersforest's inundation with $PM_{2.5}$ showing concentrations in the 95-100 percentiles as compared to national averages, and (2) the distance of the North Wayside monitor (shown by the pink cross) from the Aldine area.

[35] Harris County Appraisal District Parcel Search for Cherry Crush Properties located at 0 Winfield Rd. Houston, Texas 77050.
[36] Harris County Attorney Office Public Comments on TCEQ Non-Rule Project No. 2022-033-OTH-NR (June 14, 2023).

Figure 29: North Wayside Monitor's Distance from Aldine and $PM_{2.5}$ Exposure[37]

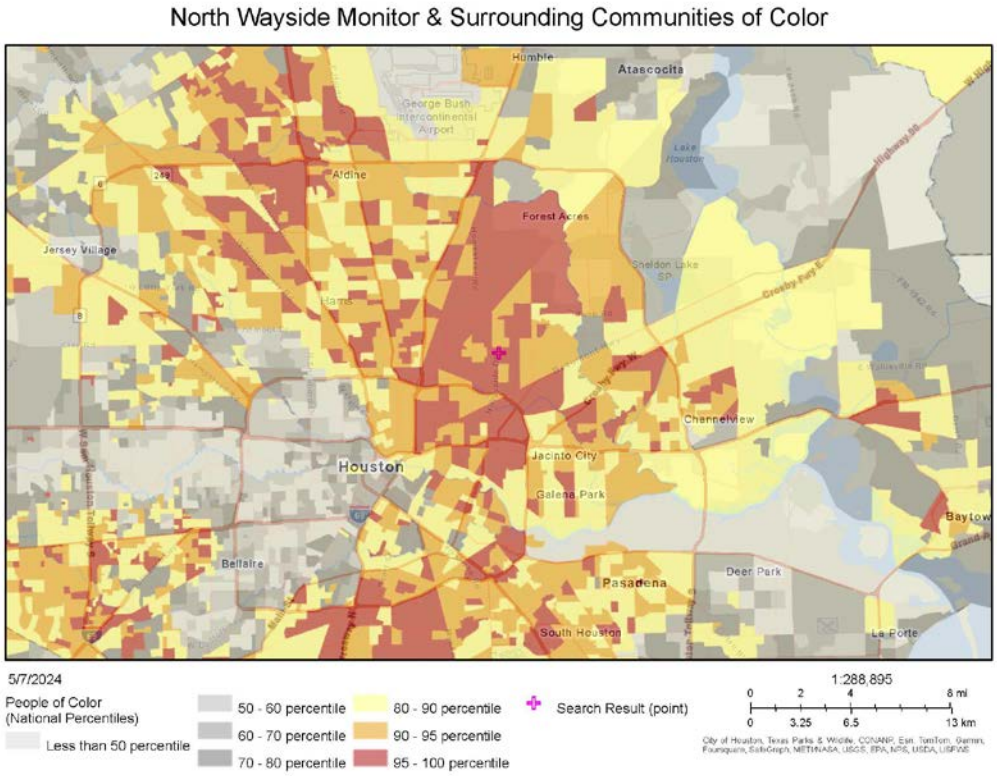


When the EPA strengthened the National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$ in February, 2024, the EPA also updated air quality monitoring requirements.[38] These monitoring requirements changed to enhance air quality protection for communities that are subject to disproportionate impacts by now including an environmental justice factor to account for populations at increased risk of $PM_{2.5}$ health effects.[39] The new rule requires that a monitor be sited in an at risk community, particularly where there are anticipated effects from sources of $PM_{2.5}$ in the area—such as East Aldine and Dyersforest. When the EPA changed the $PM_{2.5}$ standard, the EPA anticipated that number of *minimally* required monitors would also increase.[40] Based on the rule change, the community's credible concerns, and the community's demonstrated exposure to $PM_{2.5,}$ East Aldine, the Houston Department of Transformation, and Dyersforest request a Federally Equivalent Method (FEM) monitor be placed in or near their communities, near Cherry Crush, or near the other 7 concrete facilities to evaluate the

[37] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.
[38] U.S. Environmental Protection Agency, Air Monitoring for Fine Particle Pollution ($PM_{2.5}$) Fact Sheet, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-monitoring-fact-sheet.pdf
[39] U.S. Environmental Protection Agency, Air Monitoring for Fine Particle Pollution ($PM_{2.5}$) Fact Sheet, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-monitoring-fact-sheet.pdf
[40] U.S. Environmental Protection Agency, Air Monitoring for Fine Particle Pollution ($PM_{2.5}$) Fact Sheet, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-monitoring-fact-sheet.pdf

community's exposure to $PM_{2.5}$, inform the TCEQ's permitting decisions, and enhance protections to the air quality in these communities.

Figure 30: The North Wayside Monitor is Surrounded by Communities of Color[41]



Concentrated Exposure to Other Industrial Polluters

The first three years of operations for the North Wayside monitor reveal average annual background concentrations for $PM_{2.5}$ of 12.8 µg/m^3 (May 4, 2021-Jan 2022), 11.8 µg/m^3 (Jan 2022-Dec 2022), and 13.1 µg/m^3 (Jan 2023-Dec 2023), and 12.3 µg/m^3 (Jan 2024-May 2, 2024).[42]

Shortly after the North Wayside monitor's deployment, TCEQ began identifying individual members of industry in hopes of resolving the violations at the North Wayside monitor under the 2012 National Ambient Air Quality Standards (NAAQS). The list below represents the industrial users TCEQ identified as potentially responsible for the community's

[41] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.
[42] TCEQ, Regulatory Air Monitoring Data for Houston North Wayside C405/C1033 - EPA Site: 48_201_0046, https://www.tceq.texas.gov/cgi-bin/compliance/monops/yearly_summary.pl.

exposure to pollutants and the 2012 and 2024 NAAQS exceedances.[43] These facilities located within 2 miles of the North Wayside monitor:

1. Gold Star Metals (0.12 miles E)
2. Invictus Transport (0.13 miles NE)
3. XLR8 Truck Lines (0.20 miles NE)
4. Five Star Ready Mix (0.37 miles NE)
5. Texas Concrete Ready Mix (1.4 miles SW)
6. Texas Concrete Ready Mix (1.4 miles SW)
7. Queen Ready Mix (1.75 miles SE)
8. Union Pacific Rail Yard (0.40 miles SW-W)

But, there are many more concerning industrial operations in Northeast Houston within five miles from the North Wayside monitor, including the following:

1. McCarty Road Landfill
2. Longhorn Glass Plant
3. Anheuser Busch Houston Brewery
4. 69th Street Wastewater Treatment Plant
5. Owens Corning
6. Greens Bayou Electric Generating Station
7. Whispering Pines Landfill
8. McCarty Road Landfill Gas Recovery Facility
9. Johns Manville
10. Magellan Pipeline Terminals East Houston Tank Farm

While these communities are encouraged that a single monitor was deployed to serve all these Northeast communities, the results of this monitor are deeply concerning. Further, four Super Neighborhoods with increasing industrial encroachment in predominately residential subdivisions covering 25.74 sq. miles only have one monitor in the region to understand the quality of the air they are breathing. The one community monitor at North Wayside evaluating only PM_{10}, $PM_{2.5}$, Ozone, Wind & Temperature is insufficient to assess emissions from multiple different industrial facilities.

Even among community-run and City of Houston-run air monitoring programs, there are very few monitors deployed in this highly industrialized 25+ square mile residential area. In fact, the Northeastern portions—like East Aldine and Dyersforest—are also completely lacking community monitors. More importantly, State of Texas-run monitors are critical in this area where $PM_{2.5}$ is problematic to document elevated levels because when communities voice

[43] TCEQ, North Wayside Monitor Update May 2021-January 2022, (Feb. 8, 2022) at 3.

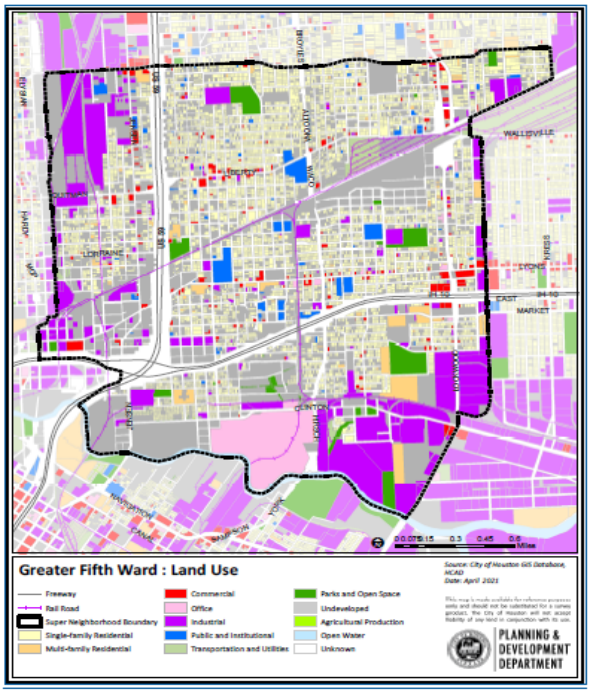
concerns to TCEQ or other authorities based on elevated readings on monitors, they are told that because the monitors are not TCEQ or EPA regulated air monitors, these readings are unreliable. As a result, the communities' valid concerns often go unaddressed.

Given the number and scope of industrial users near the North Wayside monitor, and the uptick in $PM_{2.5}$ values, the Northeast Houston Neighborhoods additionally request (i) a VOC cannister, (ii) metal emissions monitoring; and (iii) an additional State of Texas-run monitor that tests for speciated values of PM_{10}, $PM_{2.5}$ to also be deployed in Northeast Houston where these industrial facilities have congregated.

E. Fifth Ward

Progressive Fifth Ward advocates on behalf of Fifth Ward, which is an often neglected and low-income minority community, with 94% of the population identifying as either Black or Hispanic.[44] It is one of Houston's residential neighborhoods with substantial industrial land use surroundings, as shown below in purple in **Figure 31**:

***Figure 31. Land Use within the boundaries of Fifth Ward*[45]**



[44] City of Houston Planning & Development Department Super Neighborhood Resource Assessment, http://www.houstontx.gov/planning/Demographics/2019%20Council%20District%20Profiles/Greater_FifthWard_Final.pdf.

[45] City of Houston, Planning and Development Department, Super Neighborhoods Profile for Super Neighborhood 55, Greater Fifth Ward, Neighborhood Resource Pamphlet ("Demographics"), https://www.houstontx.gov/superneighborhoods/55.html.

Industrial uses include the inundation of concrete batch plants (CBPs). The table below lists CBPs affecting Fifth Ward:

Table 4. Concrete Batch Plants Affecting Fifth Ward

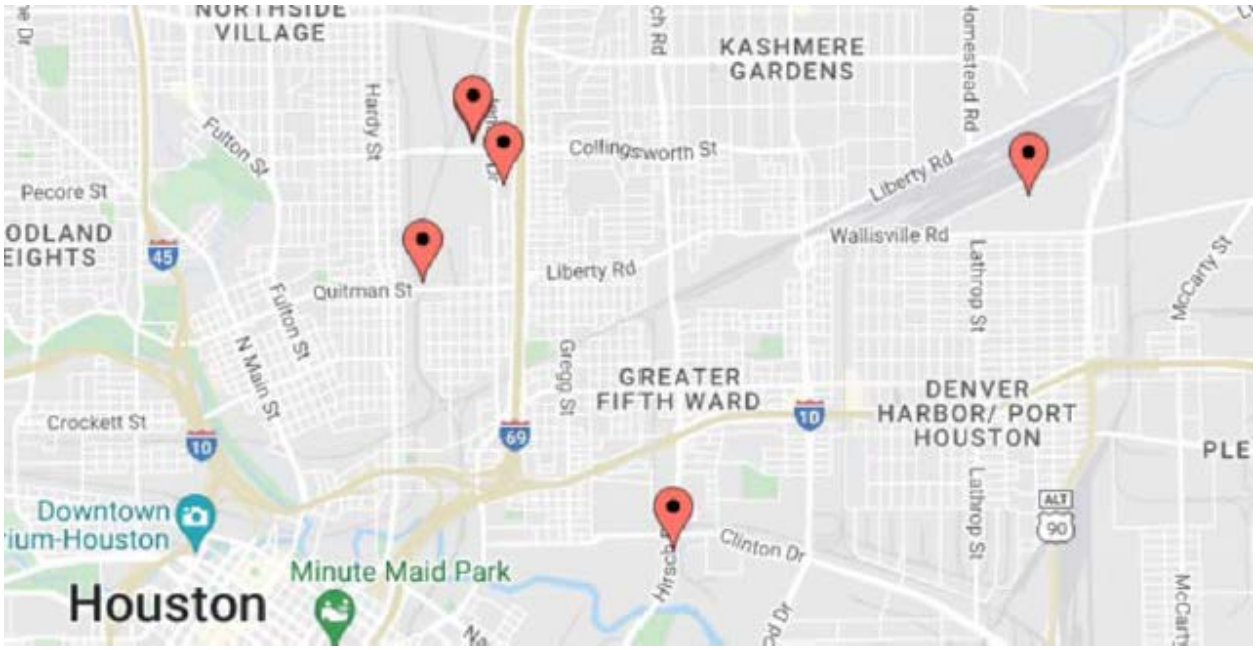
Concrete Batch Plant	**Location within Fifth Ward**
Texas Concrete Enterprise	3506 Cherry St. (77026)
Texas Concrete Enterprise	3508 Cherry St. (77026)
TexCon Ready Mix	3315 Carr St. (77026)
Cemex Rothwell Concrete Batch Plant	1902 Rothwell St (77020)
Cemtech Ready Mix Inc.	**3116 Jensen Drive (77026)**

Metal recycling facilities are also disproportionately located in or around the Fifth Ward The table below lists recycling facilities affecting Fifth Ward:

Table 5. Metal Recycling Facilities Affecting Fifth Ward

Metal Recycling Facility	**Location within Fifth Ward**
Derichebourg Recycling USA	7501 Wallisville Rd. (77020)
CMC Recycling	2015 Quitman St. (77026)
Sims Metal	90 Hirsch Rd. (77020)

Figure 32: Map of Industrial Sites Affecting Fifth Ward[46]



[46] Map created by inputting information from Tables 4 & 5 into https://batchgeo.com/

As the map in **Figure 32** above demonstrates, there are several industrial sites near Fifth Ward, which is highly burdensome for a community of less than 5 square miles. Both CBPs and metal recycling facilities are known emitters of air pollutants, including particulate matter, crystalline silica, lead, and other VOCs. When inhaled, these pollutants can cause a range of health issues, including respiratory and cardiovascular diseases. With a dense population of approximately 20,000, or 4,000 people per square mile[47], it is imperative that the proposed monitors are placed in locations that accurately reflect the community's dire situation with respect to air pollution caused by these industries.

Progressive Fifth Ward is particularly concerned about their most sensitive populations, such as children and older adults. In 2019, the City of Houston determined 25% of Fifth Ward's population was under 17 years, and 11% of the population was 65 year or older.[48] Several schools, day care centers, and senior centers are all located in proximity to culprits of toxic air pollutants. For example, Sims Metal recycling facility is approximately only 1 mile from East Orange Ame Church Day Care, Phillis Wheatley High School, and YES Prep Secondary School. Both Cemtech Concrete Ready Mix and CMC Recycling are a little over 1 mile from Dogan Elementary School. These industrial facilities are also close to JW Peavy Senior Center and Community Fellowship's Senior Citizens Center, both within the Fifth Ward area.

Progressive Fifth Ward is further concerned about individuals with health issues that are both brought on and further exacerbated by the industrial polluters in the community. For example, both the EPA's EJ Screen Mapping Tool and the Houston Health Department (HHD) confirm that Fifth Ward falls within the worst 25% of neighborhoods in Texas with respect to prevalence of asthma in adults, a health condition in which a person's air passages become inflamed, and the narrowing of the respiratory passages makes it difficult to breathe.[49] Nearly 11% of all adults in the Fifth Ward area have been told by a healthcare provider that they currently have asthma.[50] Similarly, Fifth Ward falls within the worst 25% of neighborhoods in Texas with respect to prevalence of coronary heart disease in adults, with more than 8% of adults receiving a diagnosis of heart disease.[51] The proposed air monitoring should ensure that the concerns regarding these sensitive populations are adequately addressed.

---

[47] City of Houston, Planning and Development Department, Super Neighborhoods Profile for Super Neighborhood 55, Greater Fifth Ward, Neighborhood Resource Pamphlet ("Demographics"), https://www.houstontx.gov/superneighborhoods/55.html.
[48] City of Houston, Planning and Development Department, Super Neighborhoods Profile for Super Neighborhood 55, Greater Fifth Ward, Neighborhood Resource Pamphlet ("Demographics"), https://www.houstontx.gov/superneighborhoods/55.html.
[49] Data compiled using Houston State of Health Data Portal, "Find Data by Neighborhood" tool, https://www.houstonstateofhealth.com/tiles/index/display?alias=neighborhood.
[50] Data compiled using Houston State of Health Data Portal, "Find Data by Neighborhood" tool, https://www.houstonstateofhealth.com/tiles/index/display?alias=neighborhood.
[51] Data compiled using Houston State of Health Data Portal, "Find Data by Neighborhood" tool, https://www.houstonstateofhealth.com/tiles/index/display?alias=neighborhood.

Progressive Fifth Ward appreciates that TCEQ acknowledges Fifth Ward needs more air monitoring. In 2022 and 2023, TCEQ's AMNP proposed a PM_{10} FEM continuous monitor, a $PM_{2.5}$ FEM continuous monitor, a canister to measure VOCs every sixth day, and meteorological monitors to measure wind speed, wind direction, and outdoor temperatures, in Fifth Ward. For years (2020-2022), residents and advocates for Fifth Ward have submitted comments on TCEQ's AMNP, and TCEQ has responded to these concerns by allocating air monitors to the area. However, it has taken a very long time to see the monitors installed. The 2024 AMNP states that these monitors will be deployed by December 31, 2024, at Houston Finnegan Park.

Fifth Ward needs these regulatory monitors to be installed as soon as possible. Progressive Fifth Ward also notes that prior to TCEQ's proposal of FEM monitoring in Fifth Ward, the City of Houston initiated limited community air monitoring in the area. As highlighted in our 2022 AMNP comments, the City of Houston installed a Clarity air monitor to evaluate $PM_{2.5,}$ and this monitor is mere steps from Texas Concrete Ready Mix, a BARC animal shelter, and near a local park named Brewster Park. **Table 6** shows that over 66% of the days over the last year (May 13, 2023-May 13, 2024) where there were exceedances of the old NAAQS for $PM_{2.5}$ at this monitor.

[52] Data available at https://openmap.clarity.io/.

Table 6. $PM_{2.5}$ from Clarity Monitor Near Fifth Ward—3300 Carr St. (77026)[52]

Date	$PM_{2.5}$ (µg/m^3)
05/08/2024	34.54
12/31/2023	32.13
05/07/2024	27.94
06/06/2023	26.07
11/22/2023	26.03
06/16/2023	25.59
11/18/2023	25.58
11/28/2023	25.27
03/14/2024	25.15
03/31/2024	25.05
02/18/2024	25.02
04/16/2024	24.53
04/17/2024	24.46
04/08/2024	24.43
05/06/2024	24.15
04/26/2024	23.6
03/27/2024	23.55
06/14/2023	23.48
05/23/2023	23.38
01/21/2024	23.34
07/26/2023	23.32
04/18/2024	23.15
05/22/2023	23.12
07/16/2023	22.87
06/15/2023	22.78
04/27/2024	22.77
07/15/2023	21.97
06/19/2023	21.77
02/27/2024	21.74
07/27/2023	21.67
06/20/2023	21.6
05/21/2023	21.29
05/26/2023	21.19
07/25/2023	20.84
06/22/2023	20.76
07/28/2023	20.64
08/24/2023	20.29
04/15/2024	20.2
12/14/2023	20.18
04/19/2024	20.14
08/31/2023	20.11
09/17/2023	19.86
07/14/2023	19.79
01/28/2024	19.74

Date	$PM_{2.5}$ (µg/m^3)
03/01/2024	19.73
04/01/2024	19.6
03/07/2024	19.55
04/07/2024	19.45
12/02/2023	19.35
02/26/2024	19.28
01/22/2024	19.18
05/25/2023	18.89
06/13/2023	18.87
03/23/2024	18.73
07/18/2023	18.73
06/05/2023	18.67
07/09/2023	18.56
06/18/2023	18.53
01/06/2024	18.46
10/17/2023	18.46
11/23/2023	18.37
11/30/2023	18.36
09/10/2023	18.18
05/05/2024	18.12
07/13/2023	18.12
05/24/2023	18.12
12/05/2023	18.11
08/30/2023	18.01
08/23/2023	17.97
07/19/2023	17.94
10/27/2023	17.93
11/24/2023	17.85
03/13/2024	17.84
01/17/2024	17.78
08/25/2023	17.68
02/01/2024	17.67
03/22/2024	17.62
03/16/2024	17.55
01/18/2024	17.54
10/25/2023	17.47
05/27/2023	17.43
05/20/2023	17.43
03/03/2024	17.25
01/05/2024	17.24
06/01/2023	17.22
12/01/2023	17.09
04/06/2024	16.99
09/18/2023	16.97

Date	$PM_{2.5}$ ($\mu g/m^3$)
05/09/2024	16.89
04/28/2024	16.89
12/21/2023	16.87
09/01/2023	16.69
07/11/2023	16.56
07/17/2023	16.47
11/17/2023	16.38
04/25/2024	16.37
02/09/2024	16.34
01/11/2024	16.29
05/14/2023	16.28
02/10/2024	16.22
08/22/2023	16.12
06/17/2023	16.07
03/24/2024	16.03
07/29/2023	16.03
01/07/2024	16.02
08/21/2023	15.99
12/22/2023	15.96
07/20/2023	15.94
12/20/2023	15.92
12/17/2023	15.92
08/12/2023	15.84
06/21/2023	15.81
10/16/2023	15.8
01/14/2024	15.77
08/29/2023	15.75
12/04/2023	15.67
12/26/2023	15.65
03/05/2024	15.64
03/04/2024	15.63
12/16/2023	15.6
09/13/2023	15.51
08/20/2023	15.45
04/03/2024	15.38
02/05/2024	15.28
09/27/2023	15.24
02/22/2024	15.21
01/31/2024	15.19
04/09/2024	15.18
10/03/2023	15.16
11/14/2023	15.14
02/08/2024	15.1
09/26/2023	15.06

Date	$PM_{2.5}$ ($\mu g/m^3$)
07/31/2023	14.99
12/10/2023	14.98
12/30/2023	14.81
08/11/2023	14.81
06/08/2023	14.78
08/13/2023	14.74
09/14/2023	14.73
05/01/2024	14.7
05/04/2024	14.69
02/23/2024	14.68
03/30/2024	14.65
12/18/2023	14.65
02/19/2024	14.64
08/27/2023	14.64
12/12/2023	14.61
02/25/2024	14.56
01/25/2024	14.5
01/03/2024	14.44
09/28/2023	14.43
11/16/2023	14.39
05/17/2023	14.39
05/31/2023	14.38
10/01/2023	14.37
07/10/2023	14.35
06/26/2023	14.35
07/06/2023	14.33
09/11/2023	14.32
11/02/2023	14.23
05/30/2023	14.2
12/06/2023	14.19
08/09/2023	14.19
08/28/2023	14.16
03/02/2024	14.14
03/15/2024	14.12
05/03/2024	14.09
09/09/2023	13.92
07/12/2023	13.92
10/24/2023	13.9
08/26/2023	13.85
08/04/2023	13.83
02/21/2024	13.8
04/29/2024	13.71
11/04/2023	13.7
02/12/2024	13.68

Date	$\underline{PM_{2.5}}$ (µg/m^3)
11/03/2023	13.68
08/19/2023	13.64
10/26/2023	13.62
04/14/2024	13.6
12/15/2023	13.59
05/02/2024	13.58
10/02/2023	13.55
12/08/2023	13.48
06/02/2023	13.48
11/12/2023	13.46
02/06/2024	13.4
12/24/2023	13.39
01/02/2024	13.36
06/04/2023	13.31
07/23/2023	13.3
08/14/2023	13.29
09/16/2023	13.27
07/30/2023	13.21
05/11/2024	13.15
07/02/2023	13.13
08/16/2023	13.12
08/10/2023	13.12
08/02/2023	13.12
07/08/2023	13.1
04/24/2024	13.09
06/23/2023	13.02
10/19/2023	13.01
07/21/2023	12.98
12/13/2023	12.97
04/30/2024	12.96
02/13/2024	12.93
05/18/2023	12.92
11/25/2023	12.86
02/14/2024	12.85

Date	$\underline{PM_{2.5}}$ (µg/m^3)
01/01/2024	12.82
03/12/2024	12.78
11/29/2023	12.78
11/01/2023	12.74
01/12/2024	12.7
01/10/2024	12.64
12/11/2023	12.64
09/25/2023	12.63
08/06/2023	12.63
12/29/2023	12.61
10/28/2023	12.58
03/09/2024	12.56
01/20/2024	12.53
09/12/2023	12.5
09/02/2023	12.48
08/08/2023	12.47
07/04/2023	12.45
06/24/2023	12.44
11/11/2023	12.42
01/29/2024	12.41
12/28/2023	12.37
04/04/2024	12.36
09/19/2023	12.34
05/29/2023	12.28
01/30/2024	12.27
08/07/2023	12.27
08/01/2023	12.24
09/04/2023	12.22
08/17/2023	12.21
09/08/2023	12.17
10/10/2023	12.11
06/25/2023	12.08

The data obtained over the last year at this monitor, which recorded 242 days out of 365 days where the monitor registered above 12.0 µg/m^3 for $PM_{2.5}$ further demonstrates the need for monitoring industrial sites, such as concrete batch plants, located in residential communities. Accordingly, Progressive Fifth Ward reiterates its appreciation of TCEQ's commitment to air monitoring in Fifth Ward and requests an update from TCEQ regarding the timeline for the installation of the monitors at Finnegan Park. To the extent that TCEQ's contractor is having difficulty obtaining approvals for the installation of the air monitor at Finnegan Park, Progressive Fifth Ward and other signatories are willing to help support that request to ensure this monitor is

installed.

In addition, Progressive Fifth Ward believes TCEQ should consider monitoring Fifth Ward for lead exposure because there are many sources of lead present in the area, e.g., the number of metal recycling facilities surrounding the community. Lead in the air is a problem not only because people may breathe it in, but also because people, particularly children, can swallow lead dust that has settled onto surfaces like soil, dust, and water. Lead in soil and dust stays around for many years because it does not decay or decompose.

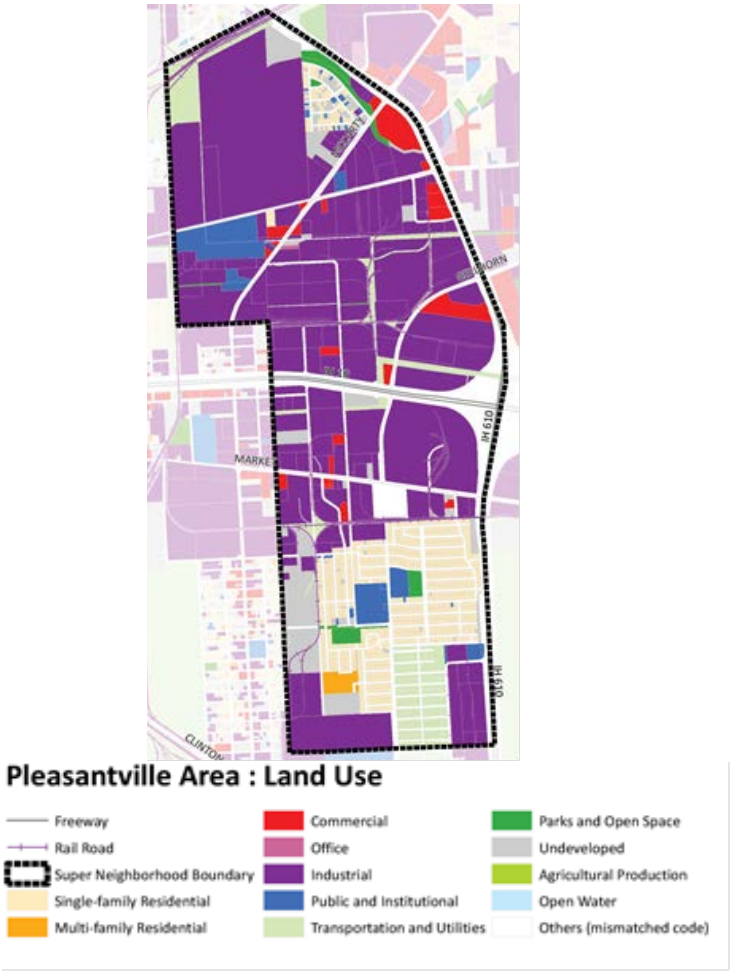
F. Pleasantville

The Pleasantville Area, designated as part of Houston's Super Neighborhood 57, includes many industrial areas, as well as two distinct residential areas. Groveland Terrace is a small residential area in the north, and south of Interstate 10 (East Freeway) is the Pleasantville subdivision. The high homeownership rate and strong neighborhood identity in Pleasantville has staved off deterioration even as the residential area has been surrounded by warehouses and industries.

The Pleasantville neighborhood is predominantly Black/African American and Latino/Hispanic, with 64% of Pleasantville Elementary School's 301 students identified as Black/African American, 34% as Latino/Hispanic, and 2% as white or mixed race. Ninety-five percent of Pleasantville Elementary students qualify for free or reduced-price lunch and 15% are learning as English as a second language.

A map created by the City of Houston Planning and Development Department of Neighborhood 57 and the related land usage in the area is shown below:

Figure 33: Land Use in the Pleasantville Area[53]



As shown in the map above, most of the land use in Super Neighborhood 57 is industrial. There are a few pockets of single-family residential properties found in the Super Neighborhood boundaries: Groveland Terrace, at the northern end of the Super Neighborhood, and Pleasantville in the southern part. Despite the industrial presence in the neighborhood, the single-family homes in this area are no less deserving of protection from contamination caused by their industrial neighbors. Air monitoring is critical to ensure that the air they breathe is not contaminated with pollution from the ship channel facilities and truckyards nearby.

Along with ACTS, Super Neighborhood 57 has advocated for air monitoring within its borders because of the proximity to the Houston Ship Channel and various port-related activities. These organizations have worked to implement community-led air monitoring program in the

[53] City of Houston, Planning and Development Department, Super Neighborhoods Profile for Super Neighborhood 57, Pleasantville, Neighborhood Resource Pamphlet ("Demographics"), https://www.houstontx.gov/planning/Demographics/2019%20Council%20District%20Profiles/Pleasantville_Final.pdf.

neighborhood with at least one continuous air monitor installed in 2020 utilizing funding through available through the Environmental Defense Fund.

Super Neighborhood 57 and ACTS are glad the TCEQ still plans to install air monitors at Pleasantville Elementary in Pleasantville by December 31, 2024, as originally announced in 2022. These VOC and PM monitors will help the community assess its exposure to particulate matter from the industrial build out in the area, particularly truck traffic along Loop Interstate-610 related to port operations nearby. These groups are anxious to see these monitors installed, having been waiting for almost 2 years for their installation. TCEQ's contractor should work closely with HISD to obtain the approvals to get the monitors installed at Pleasantville Elementary this year.

ACTS Requests Full Installation of the Pleasantville Air Monitoring Site

ACTS and the Pleasantville community have concerns that air pollution levels may exceed health based and regulatory standards within their neighborhood. Without the new TCEQ instruments installed, it is difficult to fully understand the levels and associated risk. Since 2019, ACTS has been operating a first-in-the-state community-led air monitoring network. Results of those monitors show that in 2023, four of six monitors in the neighborhood exceeded the updated $PM_{2.5}$ NAAQS standard of 9 µg/m3. ACTS recently added a total VOC measurement and plans to conduct additional air toxics monitoring to better understand those risks as well.

Table 7: Mean $PM_{2.5}$ readings from community-based monitors in Pleasantville for 2023.

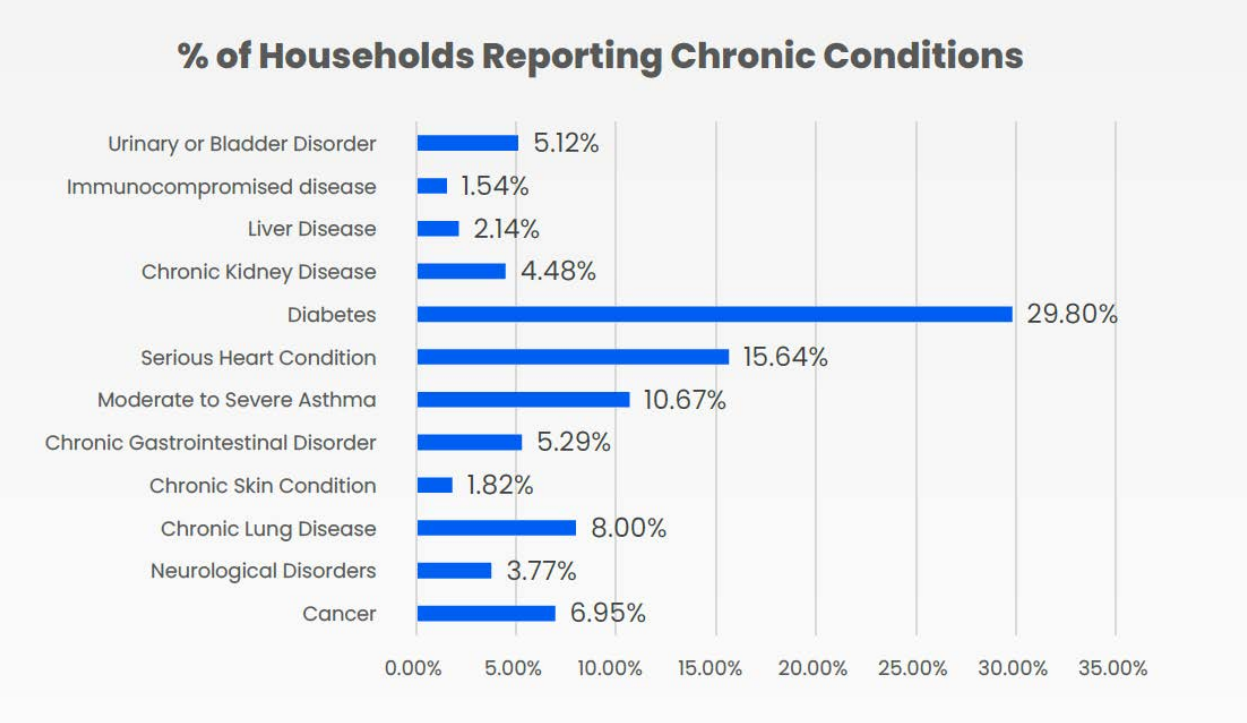
Monitor	Mean $PM_{2.5}$ ($\mu g/m^3$)	Mean AQI
1	11.5	45.6
2	5.6	28.5
3	13.6	51.7
5	13.9	60.6
6	7.4	30.5
7	12	47.1

Highlighted cells represent monitors indicating exceedance of updated NAAQS standard.

The Pleasantville community participated in a health survey recently, which found high rates of chronic conditions exacerbated by air pollution. Within the community 15.6% of residents have serious heart conditions, 10.7% have moderate to serious asthma, and 8% have chronic lung disease. Community members express concerns about health conditions in the

community and continue to need additional air monitoring data in order to protect vulnerable community members during high pollution events.

Figure 34: Rates of chronic health conditions among Pleasantville residents.



The community is also concerned about a lack of monitoring data while there is an increase in industrial activity and emissions planned in the years to come, including a planned expansion of the 610 freeway and increased emissions from Project 11 ship channel dredging material being brought into the community. It will be essential to have enough baseline air monitoring data *prior* to these activities beginning to ensure that their impacts can be accurately measured. For all of these reasons, we urge the TCEQ to work closely with the City of Houston and HISD to expedite the installation of the planned Pleasantville monitor. We also encourage TCEQ to work to keep ACTS updated on progress of the monitor installation process.

G. Freeport

Freeport, Texas is a small industrial city on the Gulf Coast located in Brazoria County, Texas. A large percentage of Freeport's approximately 12,169 residents are minorities: over 64% are of Hispanic descent, while another 14% identify as Black or African American. Freeport has a higher minority population than 82% of American communities. Freeport is also in the 82nd percentile nationally for the proportion of low-income residents, with a per capita income of $19,277 and 55% of the population classified as low-income. Thirty-five percent of residents have less than a high school education, which is worse than 93% of American communities.

And 10% are linguistically isolated, well above the national average of 4%. Freeport residents are closer to facilities handling hazardous waste than 92% of American communities.

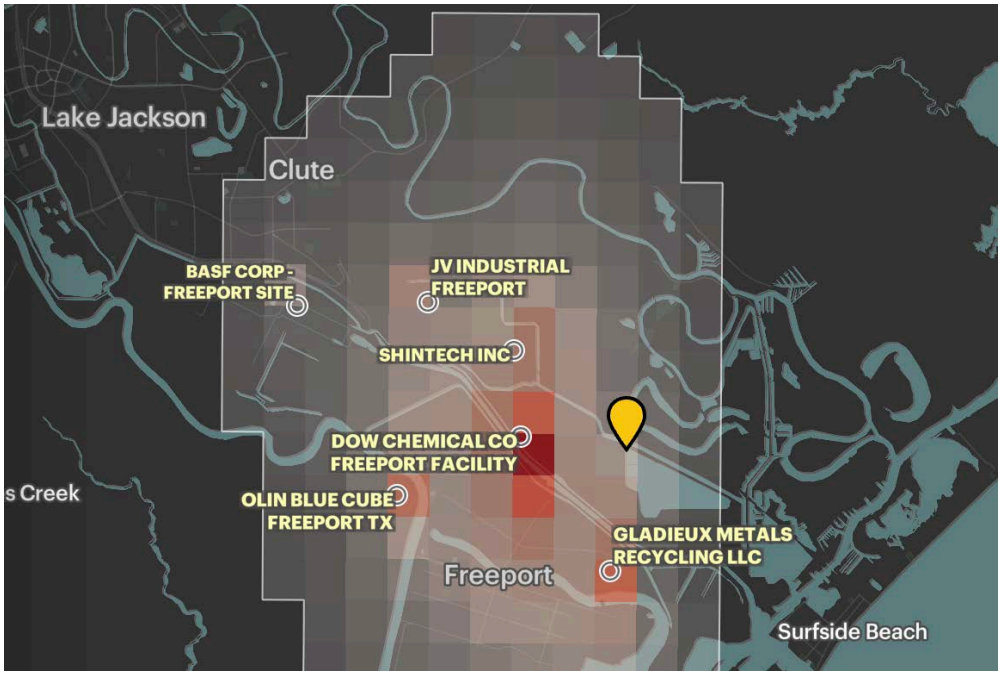
Freeport residents also rank highly in proximity to Superfund sites, since nearly the entire population lives within five miles of the GulfCo Marine Maintenance Superfund site. GulfCo Marine Maintenance was the site of barge cleaning operations for three decades and became a Superfund site when evidence revealed that hazardous substances were migrating from the site and posing a threat to nearby drinking water supplies and downstream sensitive environments. And, Freeport residents are closer to facilities that discharge water pollution than 98% of American communities. Not only is water pollution a problem, but air quality remains a major concern.

This combination of a high concentration of minority and low-income residents in conjunction with a high concentration of large industrial polluters is indicative of an environmental justice community. In Freeport, as along much of the Texas gulf coast, minority and low-income populations continue to bear a wildly disproportionate burden of the toxic pollution from the state's petrochemical industry, while being denied a share in the economic prosperity that the industry has brought to other parts of the state.

ProPublica's recent study on cancer causing industrial air pollution in the United States, identified Freeport as a hot spot.[54] This analysis reviewed five years of modeled EPA data and identified more than 1,000 toxic hot spots across the country.[55] The map below in **Figure 34** illustrates the facilities in Freeport, Texas, and the dark red spots denote the most problematic areas.

[54] Al Shaw and Lylla Younes, The Most Detailed Map of Cancer-Causing Industrial Air Pollution in the U.S., Pro Publica, (Nov. 2, 2021 updated Mar. 15, 2022), https://projects.propublica.org/toxmap/.
[55] Al Shaw and Lylla Younes, The Most Detailed Map of Cancer-Causing Industrial Air Pollution in the U.S., Pro Publica, (Nov. 2, 2021 updated Mar. 15, 2022), https://projects.propublica.org/toxmap/.

***Figure 34: Pro Publica Map of Facilities in Freeport, TX that Emit Toxic Chemical Emissions*[56]**



The major facilities contributing to toxic air emissions in Freeport include:

- Gladieux Metals Recycling: (responsible for emitting Cobalt compounds, Arsenic compounds and Nickel compounds); contributes to **47.3%** of the estimated ***excess*** cancer risk in Freeport;
- Nalco Champion: (responsible for emitting Ethylene oxide, Formaldehyde, Propylene oxide and 3 more carcinogens); contributes to 40.9% of the estimated ***excess*** cancer risk in Freeport; and
- Dow Chemical (responsible for emitting Ethylene oxide, Butadiene, 1,3-, Dichloroethane, 1,2- and 40 more carcinogens); contributes to 11% of the estimated ***excess*** cancer risk in Freeport.[57]

Dow is an additionally problematic facility. According to the Texas Attorney General's (OAG) lawsuit against Dow in 2021[58], the OAG alleges that the Dow Plant has experienced "continuing problems associated with errors and equipment malfunctions resulting in emissions

[56] Al Shaw and Lylla Younes, The Most Detailed Map of Cancer-Causing Industrial Air Pollution in the U.S., Pro Publica, (Nov. 2, 2021 updated Mar. 15, 2022), https://projects.propublica.org/toxmap/.
[57] Al Shaw and Lylla Younes, The Most Detailed Map of Cancer-Causing Industrial Air Pollution in the U.S., Pro Publica, (Nov. 2, 2021 updated Mar. 15, 2022); https://projects.propublica.org/toxmap/
[58] Cause No. D-1-GN-21-002123, State of Texas v. Dow Chemical Company, Travis County District Court, 250th Judicial District; Original Petition and Application for Injunctive relief (May 10, 2021) at 8.

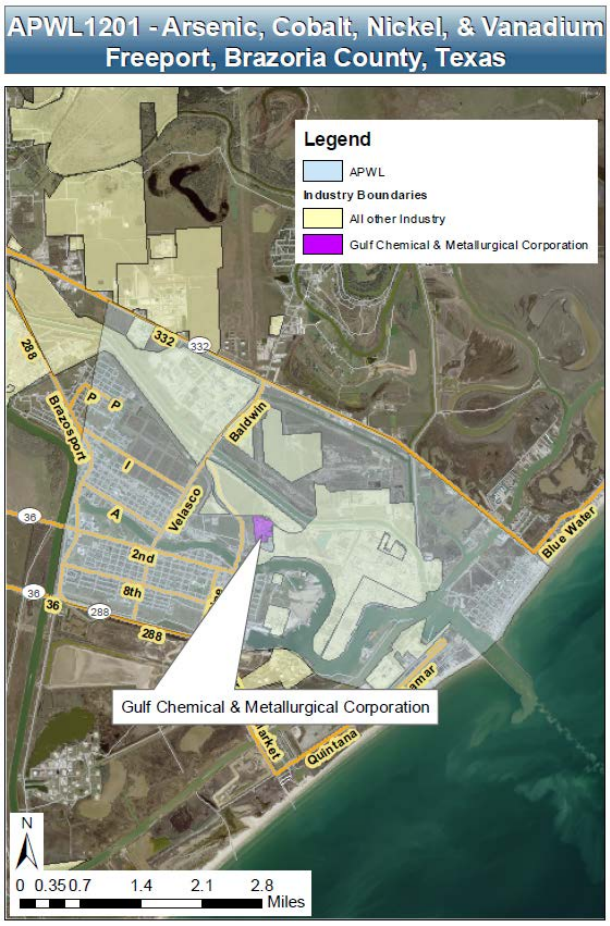
events that emit unauthorized contaminants into the environment."[59] And, during 2016-2021, TCEQ entered six administrative orders against Dow for air emission violations.[60]

While Dow remains an ongoing air quality concern, the Gladieux Facility (f/k/a Gulf Chemical and Metallurgical) also has a sordid criminal environmental history that continues to cause the local Freeport community ongoing concerns about metal emissions in the air. Especially because in 2005, the area around the Gladieux Facility was added to the Air Pollutant Watchlist as a result of elevated short-term Arsenic, Cobalt, Nickel, and Vanadium levels, which exceeded their respective air monitoring comparison values (AMCVs).[61] AMCV is a collective term used to describe chemical-specific air concentrations used to evaluate air monitoring data that are set to protect human health and welfare. Short-term AMCVs are based on data concerning acute health effects, odor potential, and acute vegetation effects.

TCEQ defined a large area where short-term exposure from this air pollution may cause respiratory symptoms and worsen existing medical conditions. As shown on the following map as **Figure 35**, this area covers nearly the entire city of Freeport.

[59] Cause No. D-1-GN-21-002123, State of Texas v. Dow Chemical Company, Travis County District Court, 250th Judicial District; Original Petition and Application for Injunctive relief (May 10, 2021) at 8.
[60] *See*, Orders entered into the following dockets: Docket No. 2014-1053-AIR-E on May 23, 2015; Docket No. 2014-1881-AIR-E on Oct. 1, 2015; Docket No. 2015-1242-AIR-E on Jul. 13, 2016; Docket No. 2015-1671-AIR-E on Nov. 8, 2016; Docket No. 2017-0378-AIR-E on Feb. 27, 2018; and Docket No. 2016-1940-AIR-E on May 30, 2018.
[61] *See* Texas Commission on Environmental Quality's Air Pollutant Watch List Area Map of 1201, Freeport, Texas.

Figure 35: TCEQ Air Pollutant Watchlist Map showing all of Freeport affected[62]



Gladieux purchased the Gulf Chemical facility out of bankruptcy in 2017, and the facility is not yet fully operational. As the TCEQ issues Gladieux more permits to begin and expand its operations in Freeport, the community remains concerned about metal emissions and about SO_2 emissions in the community. The community is especially concerned because Gladieux has applied for permits with de minimis air emission limits, and the facility does not yet (and may not be required to) have a Title V permit which would identify facility-wide emissions.

Freeport is additionally already home to the Freeport LNG terminal. This LNG terminal emits tons of pollutants, like sulfur dioxide, which can damage lungs.[63] Moreover, an explosion and fire occurred at the Freeport LNG facility on June 8, 2022 (Incident No. 381194) releasing 476,698 lbs. of CO and 55,592 lbs. of NOx (Incident No. 381191). The direct cause of the June 2022 explosion is the subject of full investigative report by IFO Group for the Pipeline and

[62] Texas Commission on Environmental Quality, Air Pollutant Watch List Area Map of 1201, Freeport, Texas.
[63] Environmental Integrity Project, Troubled Waters for LNG: The COVID-19 Recession and Overproduction derail Dramatic Expansion of Liquefied Natural Gas Terminals (Oct. 5, 2020); https://environmentalintegrity.org/wp-content/uploads/2020/10/LNG-REPORT-10.5.20.pdf

Hazardous Materials Safety Administration (PHMSA),[64] and this incident resulted in a $163,054 fine by EPA.

While metal emissions and SO_2 emissions are a major concern, Freeport, specifically, has significant ozone concerns as well. Accordingly, Better Brazoria is advocating for the existing historic Clute monitor to additionally monitor for ozone pollution. As detailed below, with the region's pending re-designation from "serious" nonattainment to "severe," Freeport has growing concerns about whether there is adequate monitoring in the region to capture accurate ozone measurements. There are an unusually high number of pipelines in the area, and the town is bordered on one side by Dow Chemical and BASF plants. These plants are both major suppliers of polyurethane raw materials and systems—which contribute major emissions that increase ozone pollution. According to local residents, the air in Freeport, and all of Brazoria County, will often irritate residents' eyes on a windy day—other times there are noxious chemical clouds. All of these industries contribute to ozone pollution, and the community is concerned that additional ozone monitoring is needed with thoughtful placement. The community is requesting that the historic Clute monitor (EPA site number: 48-039-1003) located at 426 Commerce Street, Clute, Texas 77531 that previously measured ozone be reinstated, given the EPA's redesignation of the region from "serious" to "severe."

For these reasons, Better Brazoria requests that ozone monitoring be reinstated at the Clute monitor to adequately evaluate the region's compliance with NAAQS.

III. COMMENTS ON REGULATORY NETWORK REVIEW

A. Nitrogen Dioxide (NO_2)

Nitrogen dioxide and other nitrogen oxides can harm airways in the human respiratory system.[65] Exposures over only short periods to elevated concentrations of NO_2 can "aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms…hospital emissions and visits to emergency rooms."[66] Exposure over long periods to NO_2 and NO_x contributes to the development of asthma and increases risks of respiratory infections.[67] The American Lung Association summarizes harmful health effects of NO_2 as:

- Increased inflammation of the airways;

[64] IFO Group, Freeport LNG, Quintana Island, Texas, June 8, 2022 - Loss of Primary Containment, Incident Investigation Report (October 30, 2022). A heavily redacted version of the published report is available here: https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/2022-11/IFO-Group-RCFA-Report-final-redacted.pdf.
[65] U.S. Environmental Protection Agency, Basic Information about NO_2, https://www.epa.gov/no2-pollution/basic-information-about-no2.
[66] U.S. Environmental Protection Agency, Basic Information about NO_2, https://www.epa.gov/no2-pollution/basic-information-about-no2.
[67] U.S. Environmental Protection Agency, Basic Information about NO_2, https://www.epa.gov/no2-pollution/basic-information-about-no2.

- Worsened cough and wheezing;
- Reduced lung function;
- Increased asthma attacks;
- Greater likelihood of emergency department and hospital admissions;
- Cardiovascular harm;
- Low birth weights;
- Increased risk of premature death;
- Likely cause of asthma in children;
- Likely cause of lung cancer.[68]

North Houston Concerns

A near-road NO_x monitor should be placed near Interstate 45 north of its intersection with Beltway 8 (also known as the Sam Houston Tollway) in northern Houston. The best placement of the monitor would likely be between Beltway 8 and no further north than Richey Road (Exit 64 of Interstate 45). According to the Texas Department of Transportation (TxDOT)'s Average Annual Daily Traffic (AADT) Annuals Database, this stretch of Interstate 45 is one of the busiest road segments in Harris County and the entire state.[69] Only a segment of Interstate 10 between Loop Interstate-610 and Beltway 8 on Houston's west side has more sustained annual average daily traffic. The following TxDOT traffic stations represent a four mile stretch of Interstate 45 with over 250,000 daily trips on average.

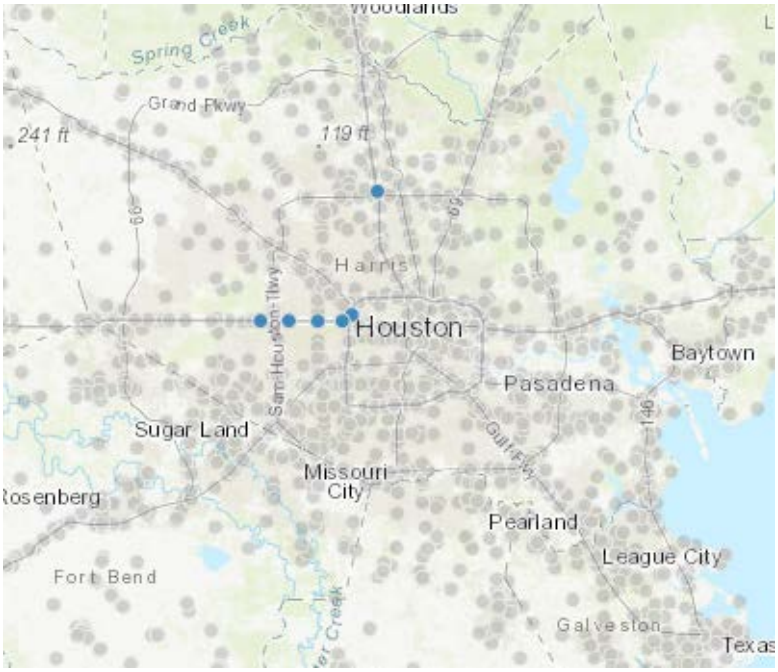
Table X: Average Annual Daily Traffic on Interstate 45 North of Beltway 8[70]

Traffic Station ID	2022 AADT	2021 AADT
245009	271,905	267,992
245121	251,227	250,376
227937	251,458	247,232

The following graphic from the TxDOT AADT Annuals database displays TxDOT Traffic Stations with more than 270,000 daily trips. It shows Interstate 10 west of central Houston is the only stretch of road with more traffic than Interstate 45 at Beltway 8 (the blue dot in the upper center of the graphic represents Traffic Station ID 245009).

[68] American Lung Association, Nitrogen Dioxide, https://www.lung.org/clean-air/outdoors/what-makes-air-unhealthy/nitrogen-dioxide.
[69] Texas Department of Transportation AADT Annuals Database, https://gis-txdot.opendata.arcgis.com/datasets/txdot-aadt-annuals.
[70] Table created using data compiled from the Texas Department of Transportation's AADT Annuals Database, https://gis-txdot.opendata.arcgis.com/datasets/txdot-aadt-annuals.

Figure 36: Average Annual Daily Traffic Above 270,000 in Houston Area[71]



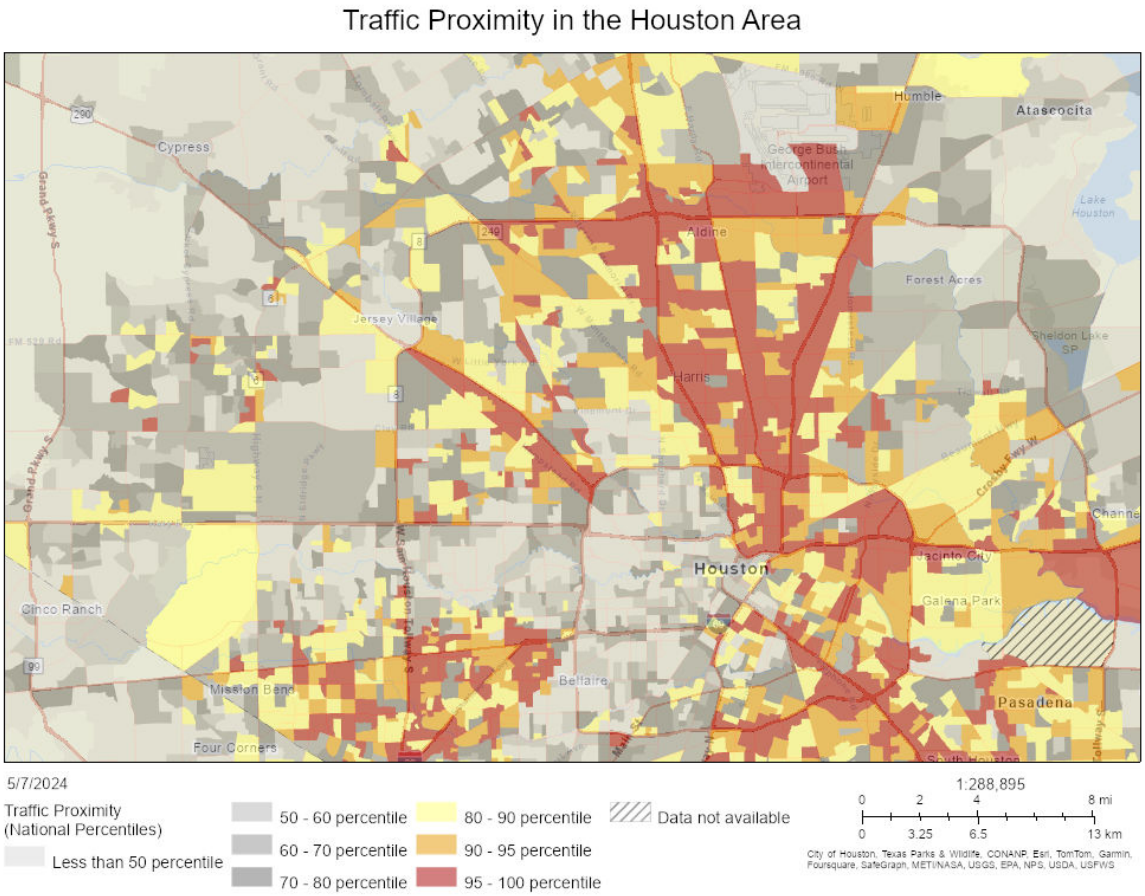
This segment of Interstate 45 is therefore a prime candidate for a near-road NO_x monitor under the regulatory design criteria. "The near-road NO_2 monitoring sites shall be selected by ranking all road segments within a CBSA by AADT…"[72] This segment of Interstate 45 has more daily trips than the two segments with near-road NO_x monitors in Harris County. The segment of Loop Interstate-610 near the Houston North Loop monitor has less than 200,000 average daily trips. (See TxDOT Traffic Station ID 239641, which had 196,723 daily trips in 2022). While a segment of US-Highway 59/Interstate 69 at the Loop I-610 interchange just northeast of the Houston Southeast Freeway monitor has comparable daily trips, the actual Houston Southeast Freeway monitor is located just southwest of this segment of road which most immediately has around 170,000 daily trips. (See TxDOT Traffic Station ID 224679 which had 169,220 in 2022.)

Moreso, the following graphic from the EPA's EJScreen Mapping tool shows Traffic Proximity as calculate with data from U.S. Department of Transportation National Transportation Atlas Database, Highway Performance Monitoring System. It shows AADT on major roads divided by distance.[73] Much of the Interstate 45 corridor is amongst the 95th percentile or higher nationally. Meanwhile, the northwest portion of the Interstate-610 loop and even the Interstate 10 corridor in west Houston score much lower when considering all major

[71] Texas Department of Transportation AADT Annuals Database, https://gis-txdot.opendata.arcgis.com/datasets/txdot-aadt-annuals.
[72] 40 CFR Part 58, Appendix D, 4.3.2(a)(1).
[73] U.S. Environmental Protection Agency, EJScreen Map Descriptions, Supplemental Descriptions, https://www.epa.gov/ejscreen/ejscreen-map-descriptions#supp.

roads in the area. Traffic Proximity along Interstate 45 is comparable to the US Highway 59/Interstate 69 stretch in southwest Houston which has near-road NO_x monitoring.

Figure 37: Traffic Proximity in the Houston Area[74]



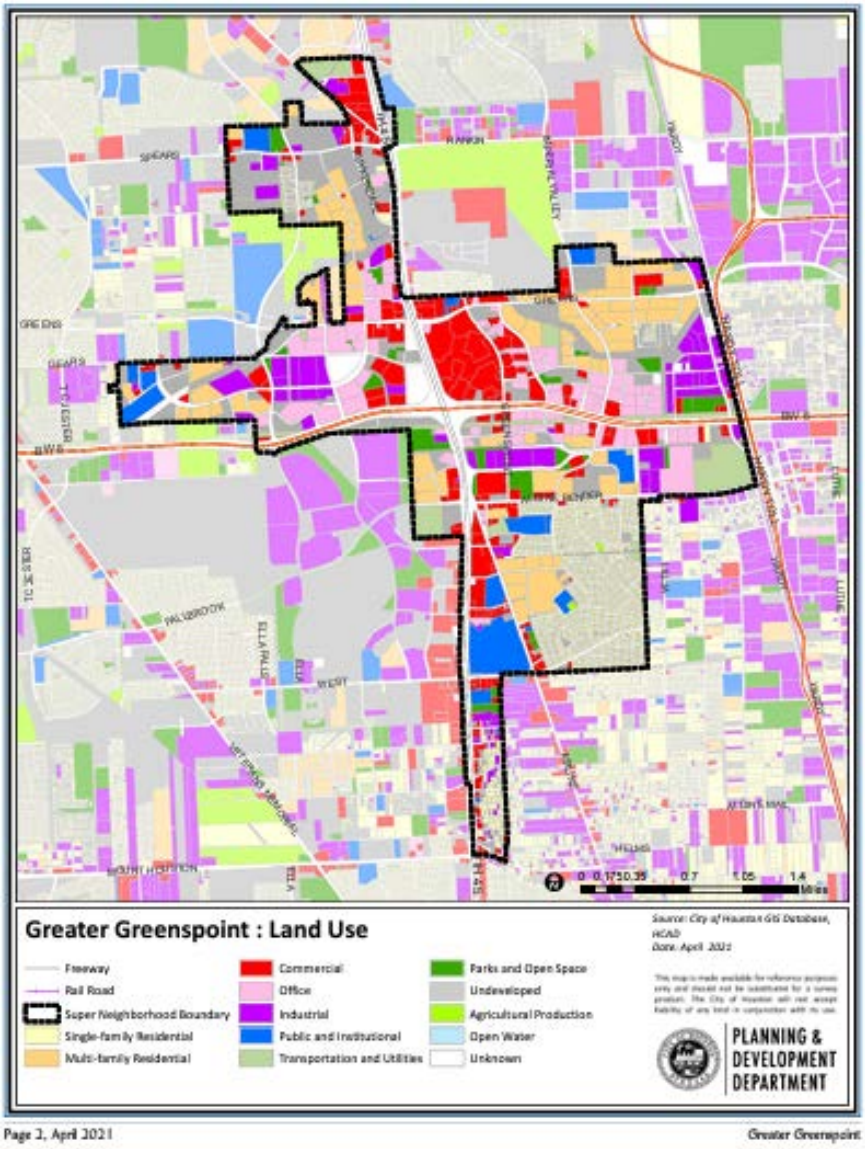
While the Houston North Loop and Houston Southwest Freeway segments certainly warrant NO_x monitoring, other factors weigh in favor of NO_x monitoring along Interstate 45 north of Beltway 8. The area on and around this segment of Interstate 45, known as Greater Greenspoint (centered around the Interstate 45/Beltway 8 interchange), has a mix of residential, commercial, and industrial areas and sites, which lend the area to both varied exposure pathways to NO_x and a varied fleet mix of traffic along Interstate 45. Further, its residents are among the most "susceptible and vulnerable" residents in Texas.

The following graphic, produced by the City of Houston's Planning and Development Department, shows the diverse and varied land use in the Greater Greenspoint area near the Interstate 45 and Beltway 8 interchange. Immediately around the Beltway 8/Interstate 45

[74] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

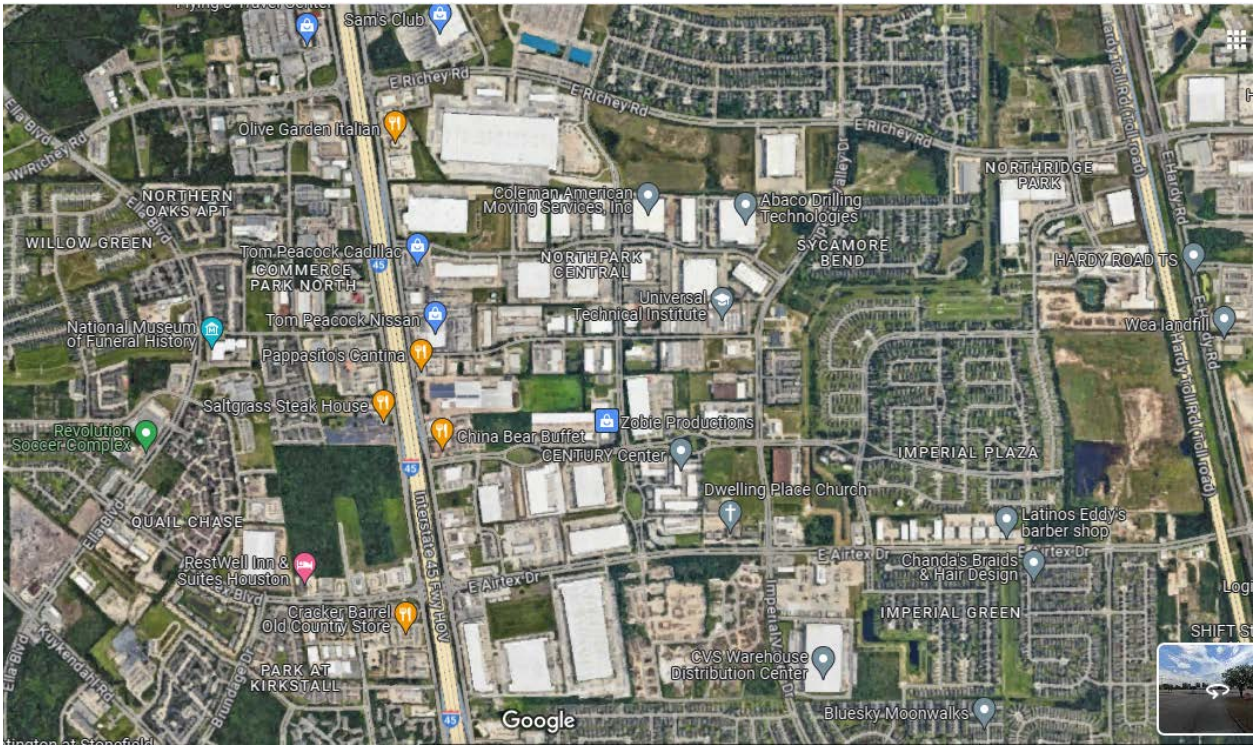
interchange are commercial towers and buildings. There are areas with both multi-family and single-family neighborhoods. And there are multiple industrial facilities. Specifically, there are numerous warehouses and truck depots east of Interstate 45 and west of the Hardy Toll Road. North of this area, between Richey Road and Airtex Road, along Interstate 45's east side are numerous warehouses frequented by large trucks and surrounded by single and multi-family housing, as seen in the following Google Maps satellite image of the area.

Figure 38: Greater Greenspoint Area Land Use[75]



[75] City of Houston, Planning and Development Department, Super Neighborhoods Profile for Super Neighborhood 2 Greater Greenspoint, Neighborhood Resource Pamphlet ("Demographics"), https://www.houstontx.gov/superneighborhoods/2.html.

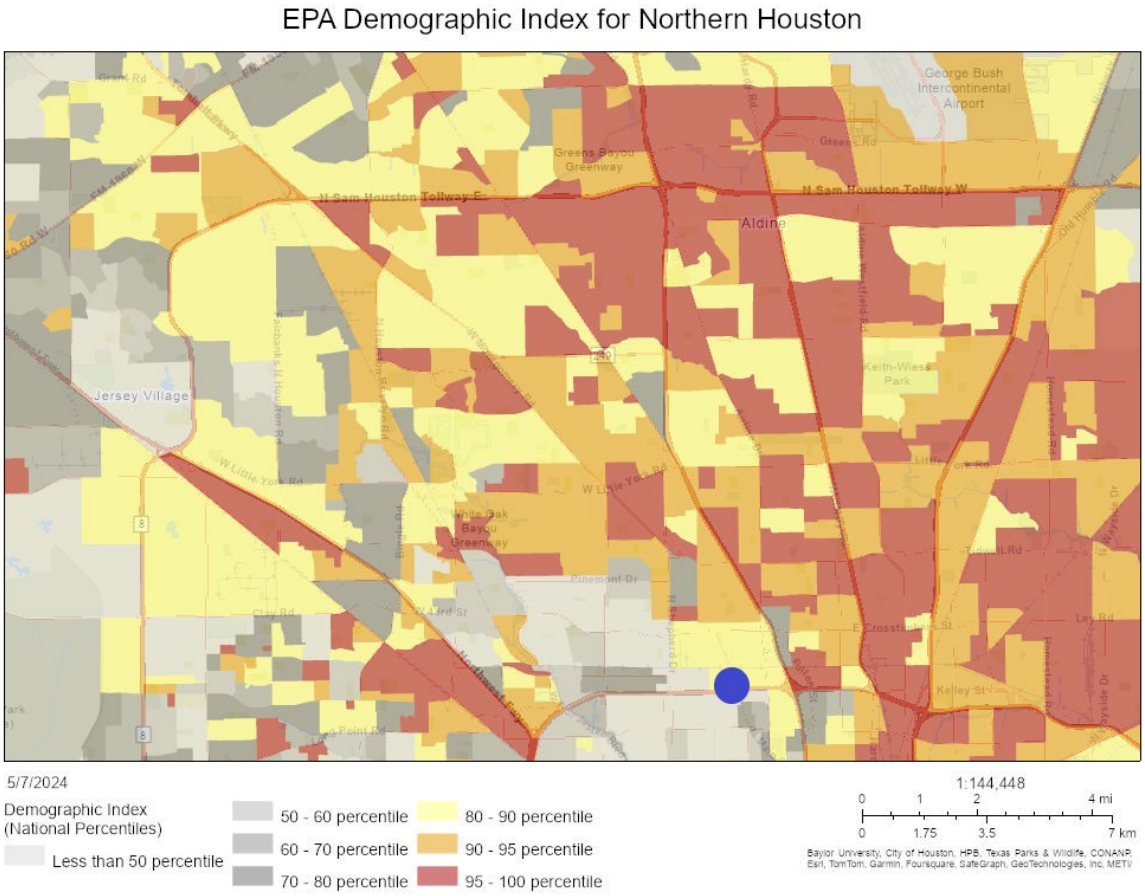
Figure 39: Land Use on Interstate 45-Harvey Toll Road Corridor North of Beltway 8[76]



The following graphic shows the EPA's EJScreen Demographic Index for the northern half of greater Houston. The EPA's Demographic Index is a combination of percent low-income residents and percent minority residents.[77] The area near Interstate 45 and Beltway 8 is nearly entirely in the 90th-100th percentile, while the area around the Houston North Loop monitor, located in the center bottom of the graphic and represented by the circle, ranks much lower.

[76] Screenshot taken from Google Maps, www.google.com/maps.
[77] U.S. Environmental Protection Agency, EJScreen Map Descriptions, Supplemental Descriptions, https://www.epa.gov/ejscreen/ejscreen-map-descriptions#supp.

***Figure 40: Demographic Index for North Houston*[78]**

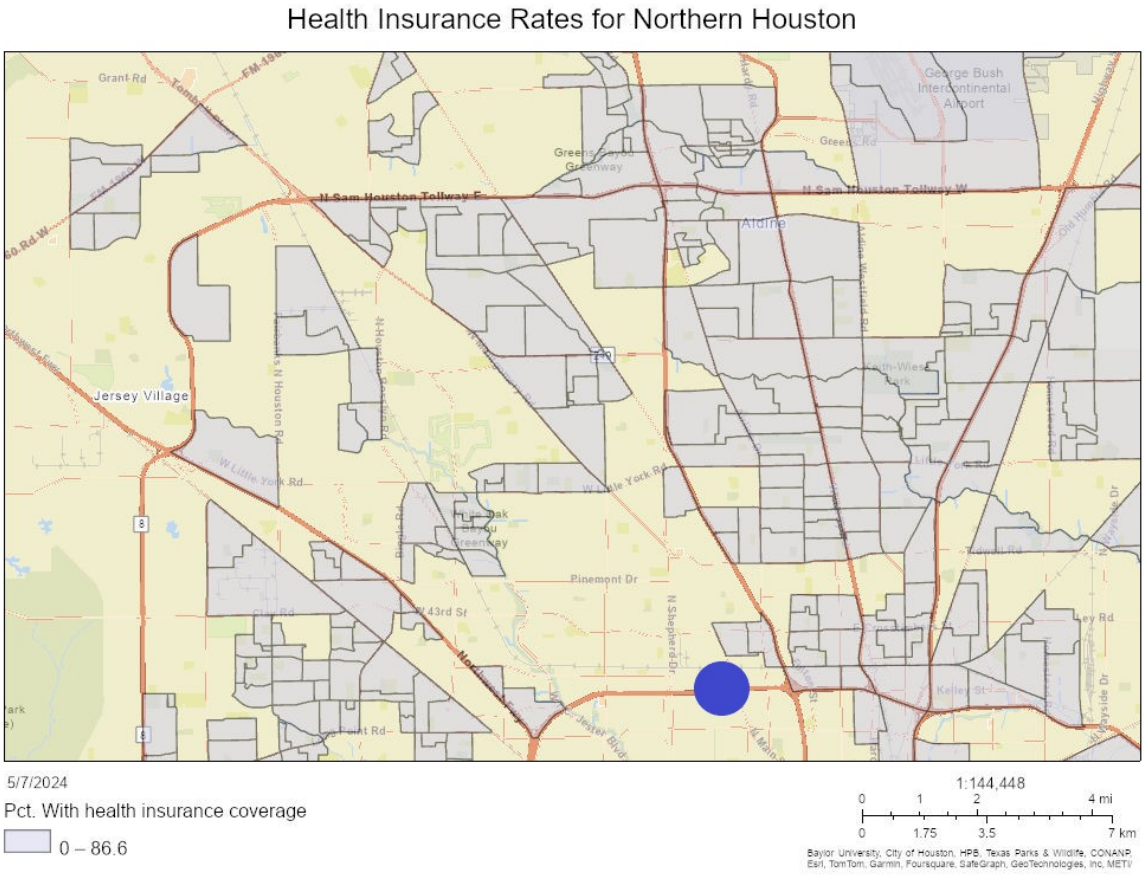


The following graphic, also from the EPA's EJScreen tool, shows census tracts where only 70% or less of the residents have health insurance. The area around the Interstate 45 and Beltway 8 interchange is entirely underinsured while the area around the Houston North Loop monitor is better insured. The residents in the Greater Greenspoint area and north along Interstate 45 lack access to affordable healthcare, making them more vulnerable and susceptible to the harms of air pollution.[79]

[78] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

[79] *See* Matthew Lavietes, World Economic Forum, Air Pollution Costs Each American $2,5000 a Year in Healthcare—Study Finds (July 1, 2021), https://www.weforum.org/agenda/2021/06/air-pollution-cost-america-healthcare-study/; Alejandra O'Connell-Domenech, The Hill, Traffic-related Air Pollution Linked to Higher Health Care Costs (August 10, 2022), https://thehill.com/changing-america/sustainability/environment/3596081-traffic-related-air-pollution-linked-to-higher-health-care-costs/.

***Figure 41: Health Insurance Coverage in North Houston*[80]**



Beaumont Area Concerns

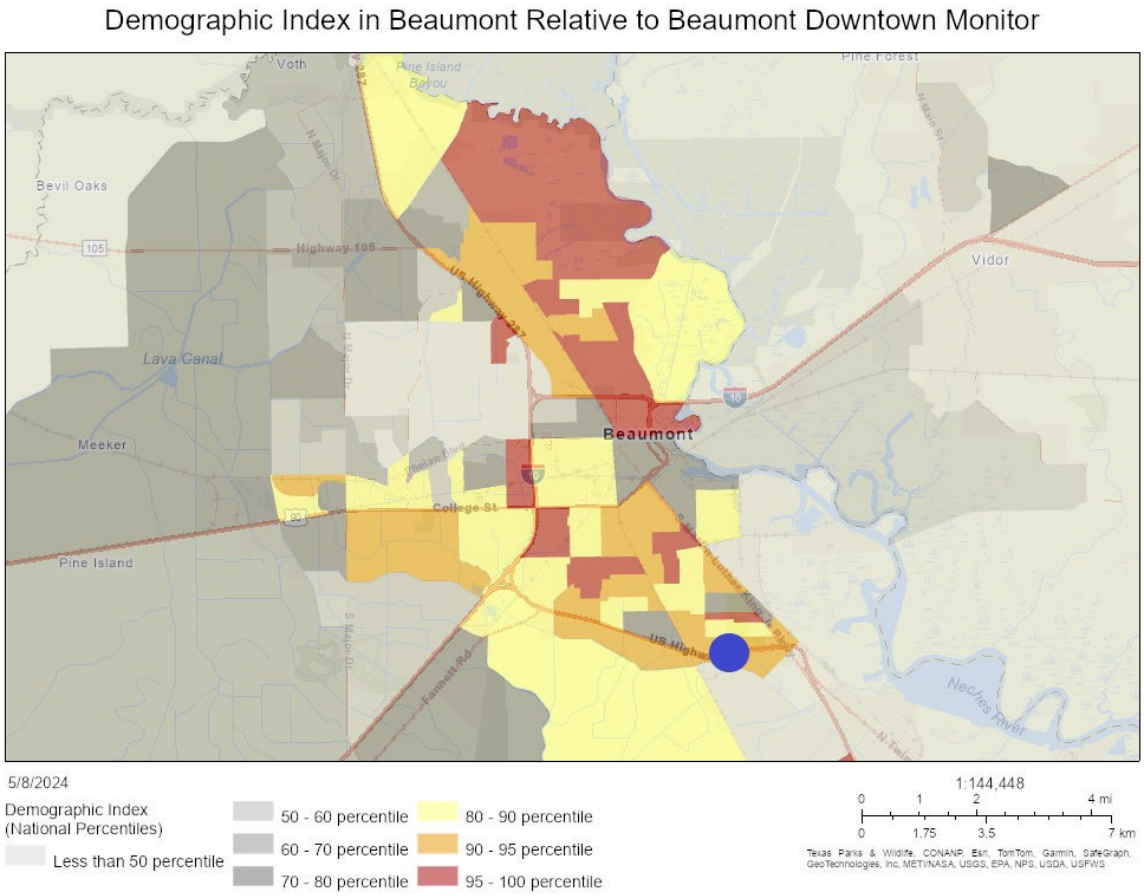
A NO_x monitor should be required in Beaumont, Texas, either at the existing Beaumont Mary monitoring site or along the nearby Interstate 10 corridor through central Beaumont. This area is both "susceptible and vulnerable" and has high AADT and other notable NO_x sources.[81]

The Beaumont Mary monitor is located in the historic Charlton Pollard neighborhood and within the larger East Side of Beaumont. Charlton Pollard is an especially vulnerable neighborhood—it is low-income, majority minority, and surrounded by large industrial facilities, the Port of Beaumont, and highways and railroad tracks. As mentioned above, Beaumont's East Side is generally low-income and at-risk for health problems from air pollution. The following two graphics show EPA's EJScreen Demographic Index for Beaumont and EJScreen's Low Life

[80] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.
[81] *See* 40 CFR Part 58, Appendix D 4.3.4(b).

Expectancy Index with the location of the existing Beaumont Downtown NO_x monitor marked with a blue circle. The monitor is not located directly in the higher percentile areas.

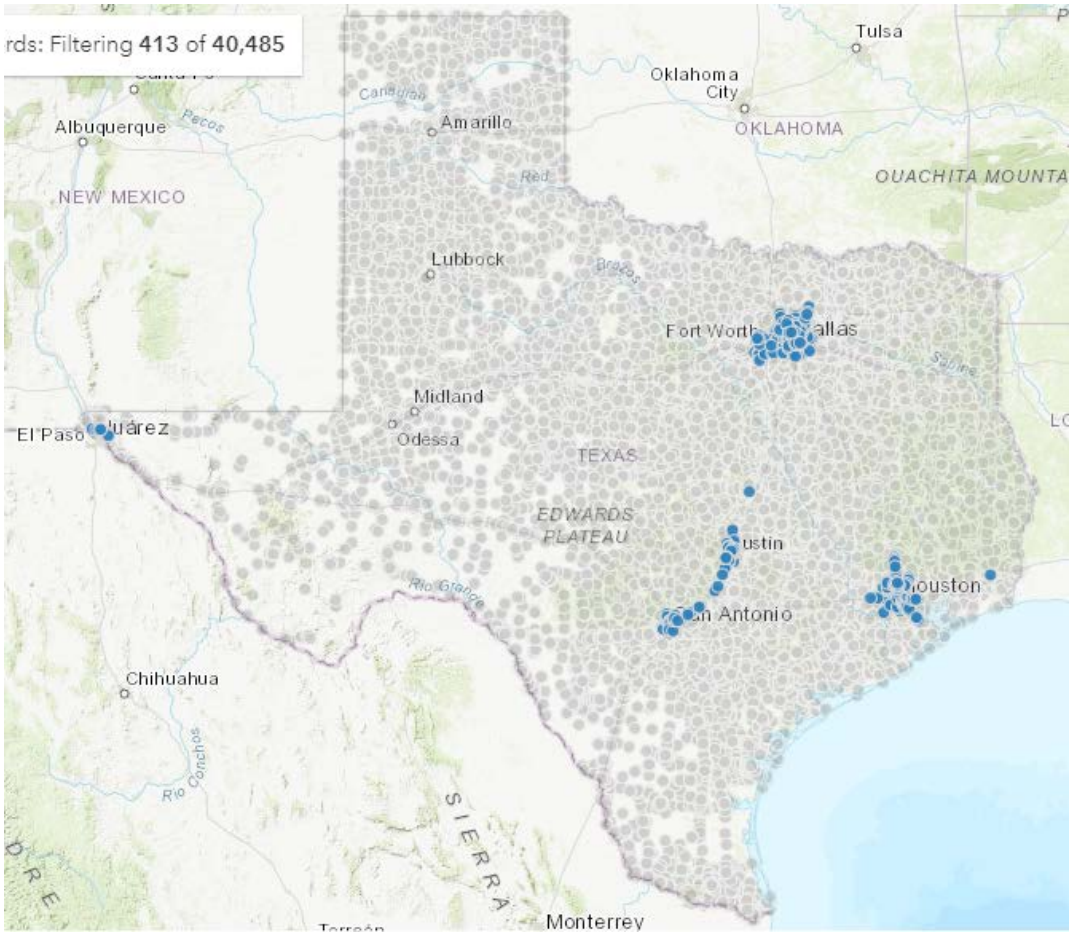
***Figure 42: Demographic Index in Beaumont*[82]**



Interstate 10, which crosses through central Beaumont just north of Charlton Pollard is one of the busiest stretches of road in the entire State of Texas. TxDOT's AADT Annuals database shows Interstate 10 in central Beaumont as one of only two locations outside the major CBSA's of D/FW, Austin, San Antonio, El Paso, and Houston with more than 130,000 daily trips. The other location, in Belton, might be a worthy location for a NO_x monitor due to heavy traffic, as well, but is otherwise not as threatened by industrial activity nor as susceptible and vulnerable to healthcare challenges as Charlton Pollard and Beaumont's larger East Side.

[82] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

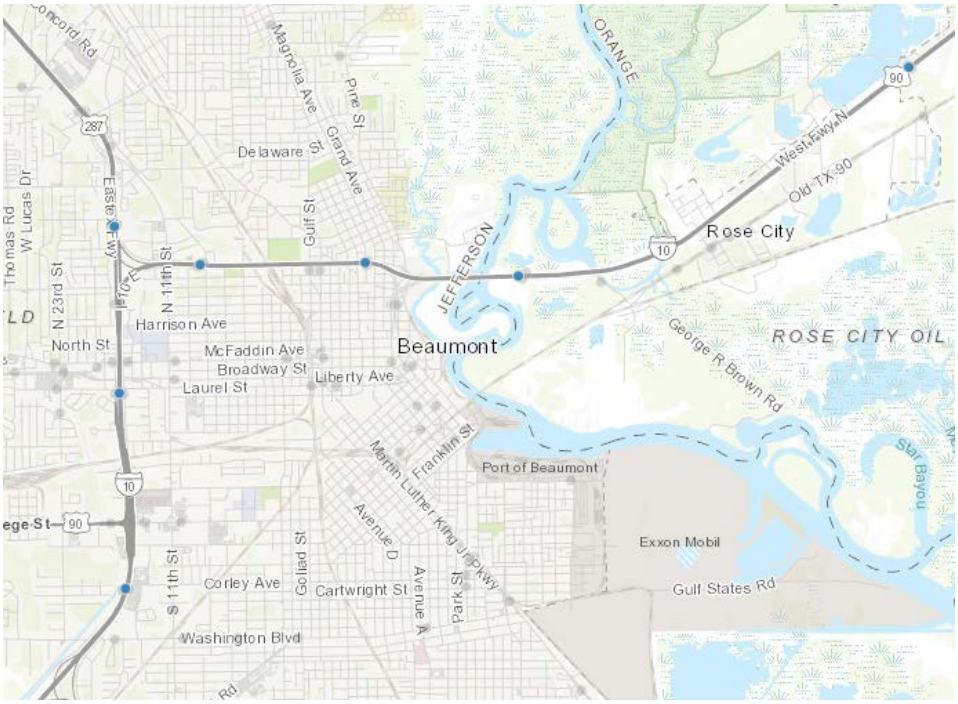
***Figure 43: Average Annual Daily Traffic Sites Above 130,000 Trips in Texas*[83]**



The following graphic shows traffic stations with 2022 AADT of over 75,000 in Beaumont. The graphic also notes the location of the Port of Beaumont and the large Exxon Mobil facility.

[83] Texas Department of Transportation AADT Annuals Database, https://gis-txdot.opendata.arcgis.com/datasets/txdot-aadt-annuals.

Figure 44: TxDOT Traffic Stations in Beaumont with Average Annual Daily Traffic Above 75,000[84]



The following chart shows 2022 and 20221 AADT in Beaumont along the Interstate 10 corridor, providing a clear basis to consider NO_x monitoring in the area.

Table 8: Highest Average Annual Daily Traffic at Traffic Stations in Beaumont[85]

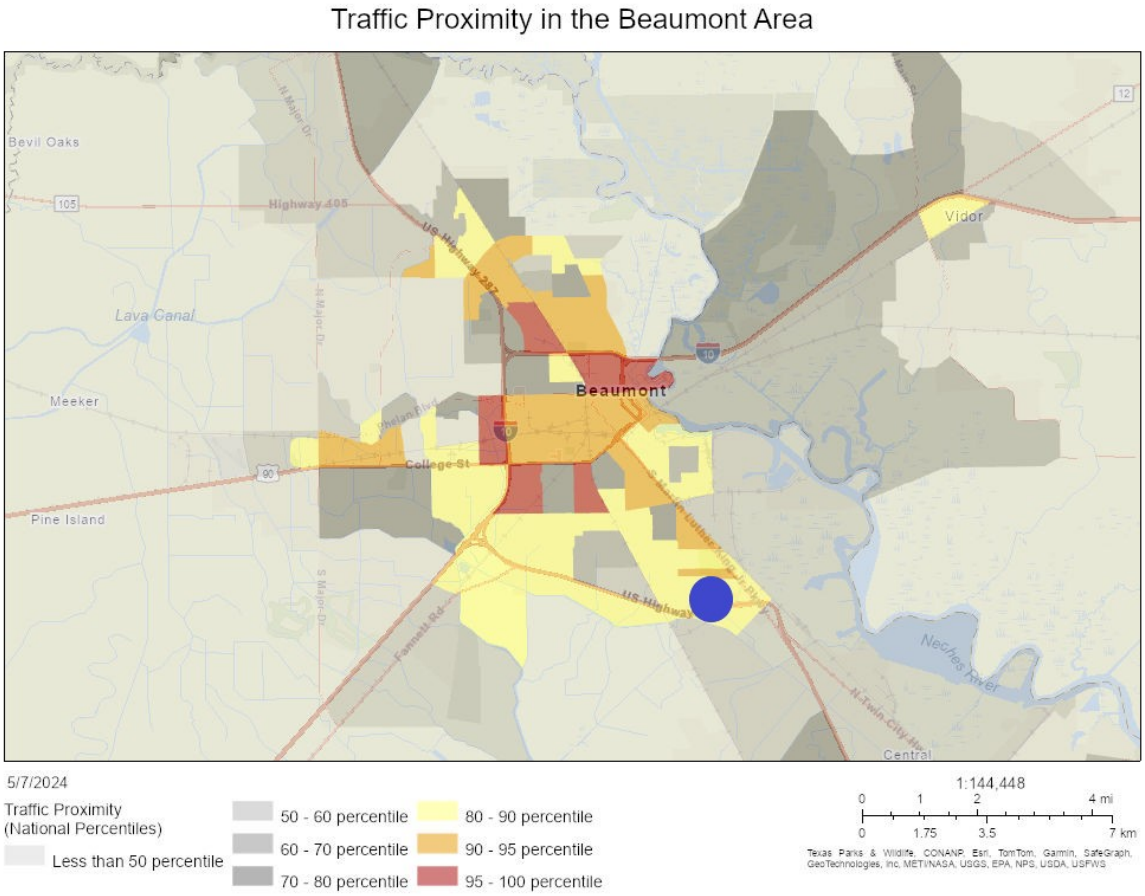
Traffic Station ID	2022 AADT	2021 AADT
295177	130,685	117,050
295457	111,265	113,792
295537	81,672	83,705
295593	85,825	92,367
297177	78,230	86,619
297225	77,615	85,918
297297	76,169	82,431

While commenters do recognize the Beaumont Downtown monitor measures NO_x, it is located on the southern edge of Beaumont and generally not in or near residential areas. Additionally, it is over 4 miles from Interstate 10 and generally upwind from the Port of Beaumont, most rail lines and traffic, and the large Exxon Mobil facility and other industrial sites near more densely populated areas of Beaumont. The following graphic shows the EPA

[84] Texas Department of Transportation AADT Annuals Database, https://gis-txdot.opendata.arcgis.com/datasets/txdot-aadt-annuals.
[85] Table compiled using data from the Texas Department of Transportation's AADT Annuals Database, https://gis-txdot.opendata.arcgis.com/datasets/txdot-aadt-annuals.

EJScreen's Traffic Proximity factor. The existing NO_x monitor at the Beaumont Downtown monitor is marked with a circle and is in area with notably less traffic proximity than central Beaumont and the area along Interstate 10.

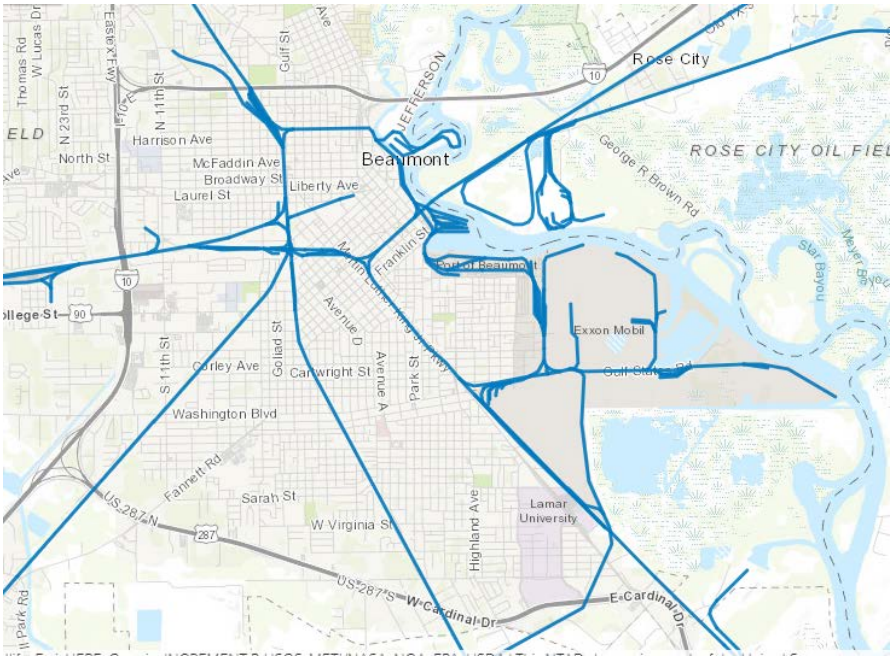
Figure 45: Traffic Proximity in Beaumont[86]



The following graphic shows railroads in the Beaumont area, according to the U.S. Department of Transportation's Bureau of Transportation Statistics.[87] Beaumont's East Side, and in particular, the Charlton Pollard area and adjacent neighborhoods have a high density of railroads. These railroads help move cargo to and from the Port of Beaumont and to and from the many industrial facilities in the area in addition to long haul trains moving through the area from Houston, Louisiana and elsewhere.

[86] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.
[87] U.S. Department of Transportation, Bureau of Transportation Statistics, North American Rail Network Lines, https://geodata.bts.gov/datasets/usdot::north-american-rail-network-lines/about.

***Figure 46: Railroads in Beaumont Area*[88]**



In addition to mobile sources such as road traffic, railroads, and ships and activities at the Port of Beaumont, Beaumont's East Side and in particular, Charlton Pollard are downwind of several large point sources of NO_x emissions. According to the NEI, the Beaumont Mary monitor is located near some of Jefferson County's (and the whole region's) highest emitters of NO_x. Two of Jefferson County's four largest emitters are located within 1 to 1.5 miles of the Beaumont Mary monitoring site. These are the Exxon Mobil Beaumont refinery and the Exxon Mobil chemical plant. The location of the sprawling integrated ExxonMobil plant can be seen on the above map—they are located just east of the Beaumont Mary monitor. Together, in 2017, those two facilities emitted over 2,474 tons of NO_x. (The refinery emitted 1,783 tons and the chemical plant emitted 691 tons.)[89] These facilities alone make up nearly 25% of the approximately 10,300 tons of NO_x emitted in all of Jefferson County.

B. Sulfur Dioxide (SO_2)

SO_2 is an air toxic associated with a variety of negative health effects. Short term exposures to SO_2 can harm the respiratory system and cause a variety of symptoms making breathing difficult.[90] Children and people with existing pulmonary issues such as asthma are

[88] U.S. Department of Transportation, Bureau of Transportation Statistics, North American Rail Network Lines, https://geodata.bts.gov/datasets/usdot::north-american-rail-network-lines/about.
[89] U.S. Environmental Protection Agency, Environmental 2017 National Emissions Inventory, https://www.epa.gov/air-emissions-inventories/2017-national-emissions-inventory-nei-data.
[90] U.S. Environmental Protection Agency, Sulfur Dioxide Basics, What are the harmful effects of SO_2, https://www.epa.gov/so2-pollution/sulfur-dioxide-basics#effects.

especially vulnerable to the negative effects of SO_2.[91] Additionally, SO_2 can react with other compounds in the air to form particulate matter, another criteria pollutant and potent respiratory irritant discussed below.[92]

According to the EPA, the largest source of SO_2 in the atmosphere is the burning of fossil fuels by power plants and other industrial facilities.[93] Other lesser sources of SO_2 emissions include: industrial processes such as extracting metal from ore; natural sources such as volcanoes; and locomotives, ships and other vehicles and heavy equipment that burn fuel with a high sulfur content.

Port Arthur Concerns

One of the largest SO_2 emitters in all of Texas is located in West Port Arthur and of immense concern to residents in that environmental justice community. The Oxbow Calcining facility, located due south of residential Port Artur, emits around 11,500 tons of SO_2 per the National Emissions Inventory.[94] Amongst the state's largest emitters, Oxbow Calcining is uniquely situated near a relatively dense urban area. Oxbow Calcining's emissions should therefore be recognized as a serious public health concern, and an environmental justice concern.

PACAN has and continues to advocate for better emissions controls and air monitoring from Oxbow Calcining. Despite known concerns, Oxbow Calcining has for decades refused to install modern pollution controls. Rather, Oxbow Calcining has modified its plant to attempt to avoid NAAQS exceedances at the Port Arthur 7th Street Gate 2 SO_2 monitor, which ostensibly is supposed to detect peak SO_2 concentrations under the 2015 Data Requirements Rule (DRR) for the 1-hour SO2 NAAQS.[95]

To better understand the dispersion of SO_2 emissions from Oxbow Calcining and to hopefully assist TCEQ in best locating an SO_2 monitor(s) in and around Oxbow Calcining and West Port Arthur, PACAN commissioned an expert, I2M Associates, LLC, to conduct an SO_2 air quality analysis for Port Arthur. The modeling results raised concerns, including that:

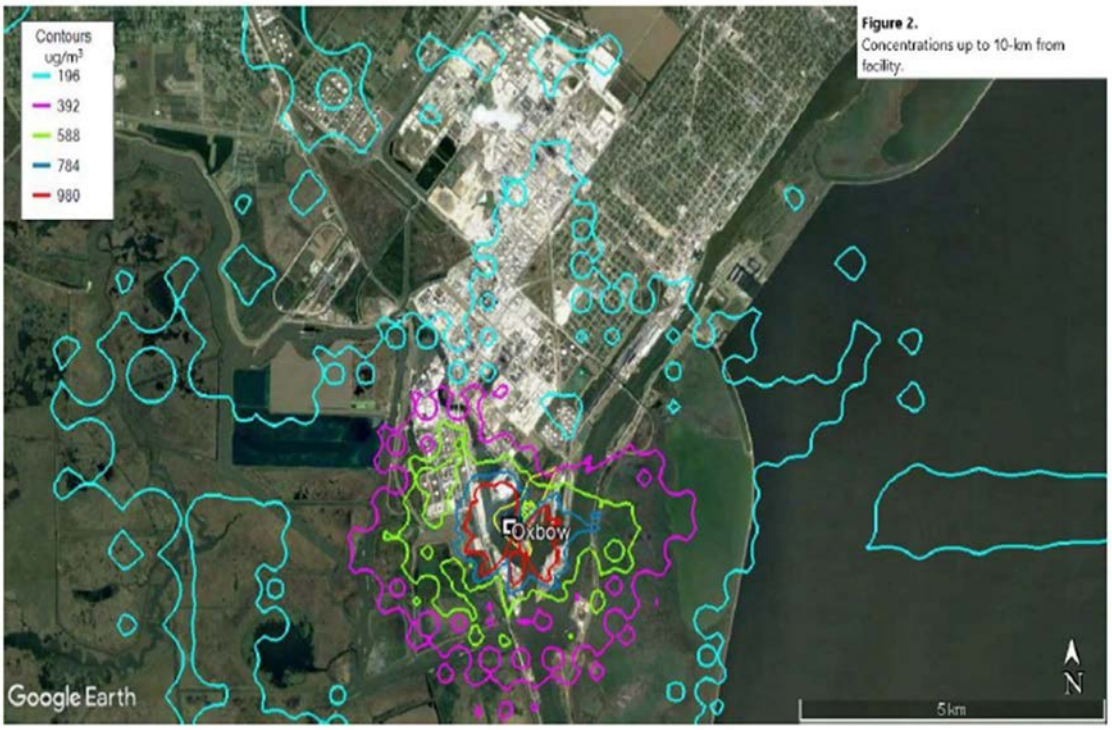
> Oxbow's SO_2 emissions at their permitted rates are predicted, based on AERMOD modeling of Oxbow hot stacks using Oxbow's emission point input

[91] U.S. Environmental Protection Agency, Sulfur Dioxide Basics, What are the harmful effects of SO_2, https://www.epa.gov/so2-pollution/sulfur-dioxide-basics#effects.
[92] U.S. Environmental Protection Agency, Sulfur Dioxide Basics, What are the harmful effects of SO_2, https://www.epa.gov/so2-pollution/sulfur-dioxide-basics#effects.
[93] U.S. Environmental Protection Agency, Sulfur Dioxide Basics, What are the harmful effects of SO_2, https://www.epa.gov/so2-pollution/sulfur-dioxide-basics#effects.
[94] U.S. Environmental Protection Agency, Air Emissions Inventories, National Emissions Inventory, https://www.epa.gov/air-emissions-inventories/national-emissions-inventory-nei.
[95] Texas Commission on Environmental Quality, 2024 Draft Air Monitoring Network Plan, at 15; 40 C.F.R. Part 51, Subpart BB.

parameter values, to result in significant numbers of exceedances of the SO_2 NAAQS one-hour standard in Port Arthur, Texas and Jefferson County. The modeling results are consistent with the ambient monitoring data for local monitors, substantiating the exceedances of the SO_2 NAAQS one-hour standard in Jefferson County.[96]

Results of the I2M modeling are included below in **Figure 47** and **Figure 48**. **Figure 47** shows concentrations up to 10km from Oxbow. Figure X shows the area where modeling receptors were predicted to exceed the SO_2 NAAQS one-hour standard of 196 ug/m3 (75 ppb) based on 2017 information from the EPA's NEI.

***Figure 47: Modeled Concentrations of SO_2 Near the Oxbow Calcining Facility in West Port Arthur*[97]**



[96] I2M Associates, Report of Findings, Port Arthur Industrial Source Sulfur Dioxide (SO2) Air Quality Modeling—Oxbow SO2 Emissions Assessment, Jefferson County, Texas (July7, 2021), at 23.
[97] I2M Associates, Report of Findings, Port Arthur Industrial Source Sulfur Dioxide (SO2) Air Quality Modeling—Oxbow SO2 Emissions Assessment, Jefferson County, Texas (July7, 2021), at 19.

***Figure 48: Modeled Locations of One-Hour NAAQS Exceedances for SO_2 Near the Oxbow Calcining Facility in West Port Arthur*[98]**

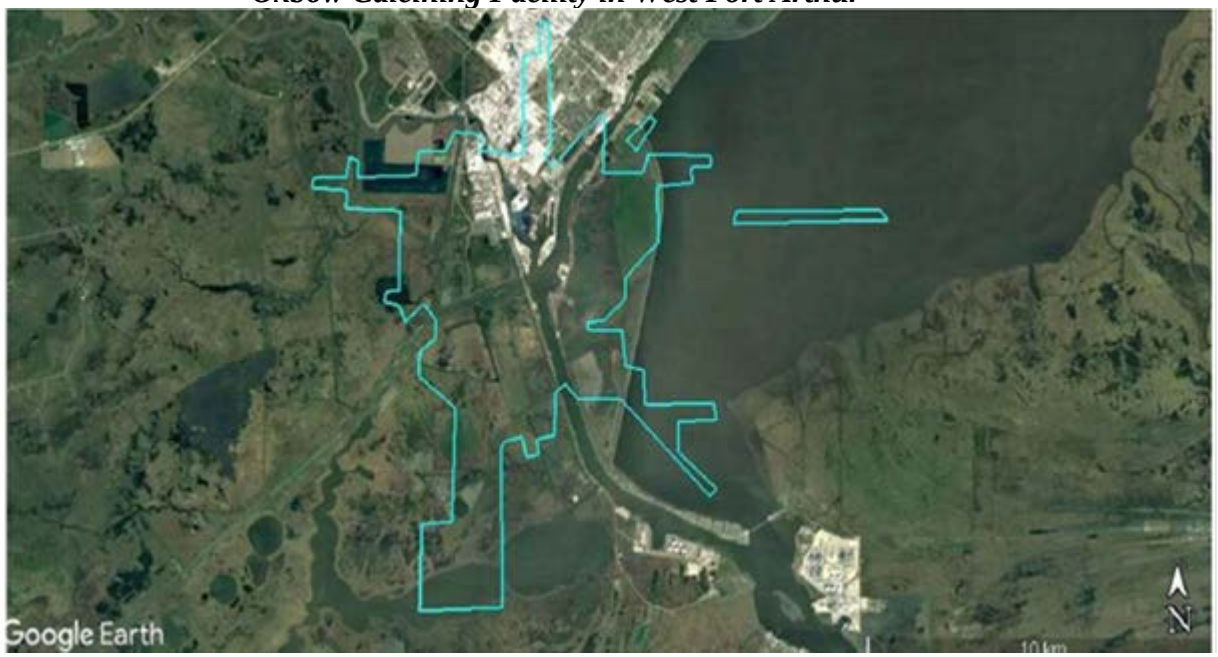
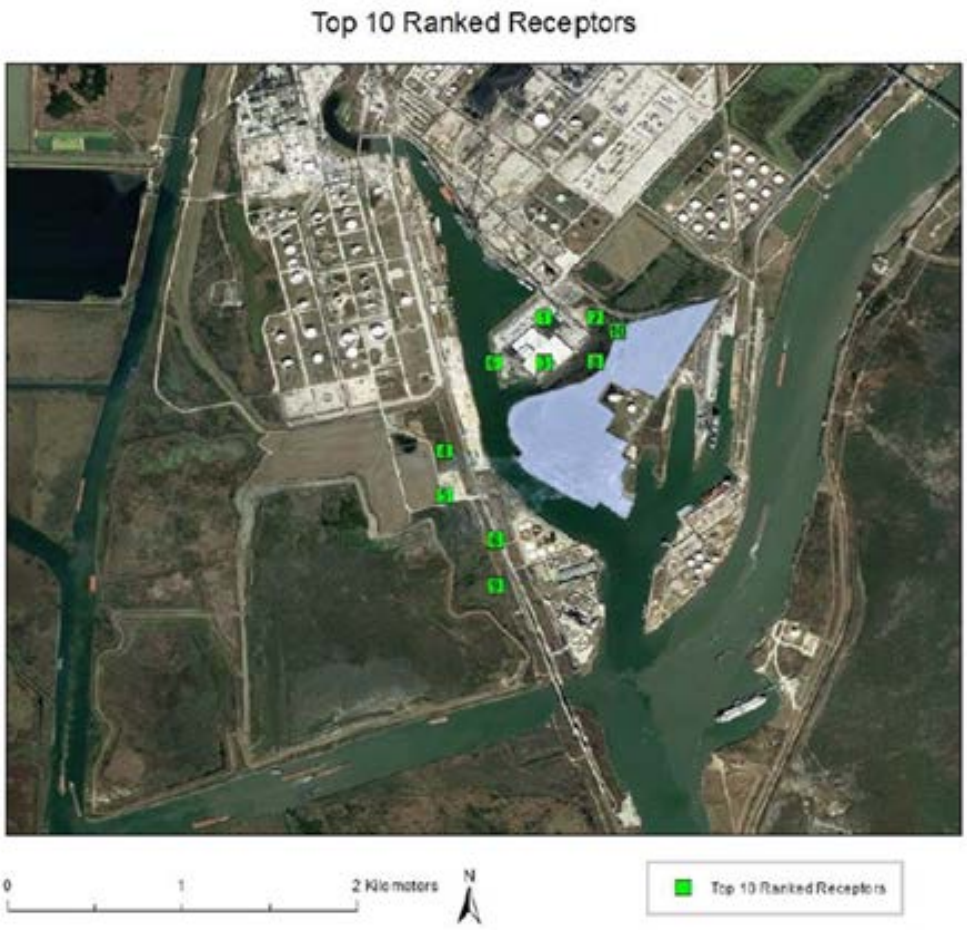


Figure 49 shows the 10 top receptor locations based on the frequency of 1-hour exceedances and high normalized values per modelling and analysis performed by TCEQ itself. To comply with the DRR and ensure SO_2 levels in Port Arthur are not exceeding the NAAQS, TCEQ must include a better placed monitor(s) near and around Oxbow to fully reflect the reality of emissions in the area.

[98] I2M Associates, Report of Findings, Port Arthur Industrial Source Sulfur Dioxide (SO2) Air Quality Modeling—Oxbow SO2 Emissions Assessment, Jefferson County, Texas (July7, 2021), at 21.

***Figure 50: Top Modeling Receptors Near the Oxbow Calcining Facility in West Port Arthur*[99]**



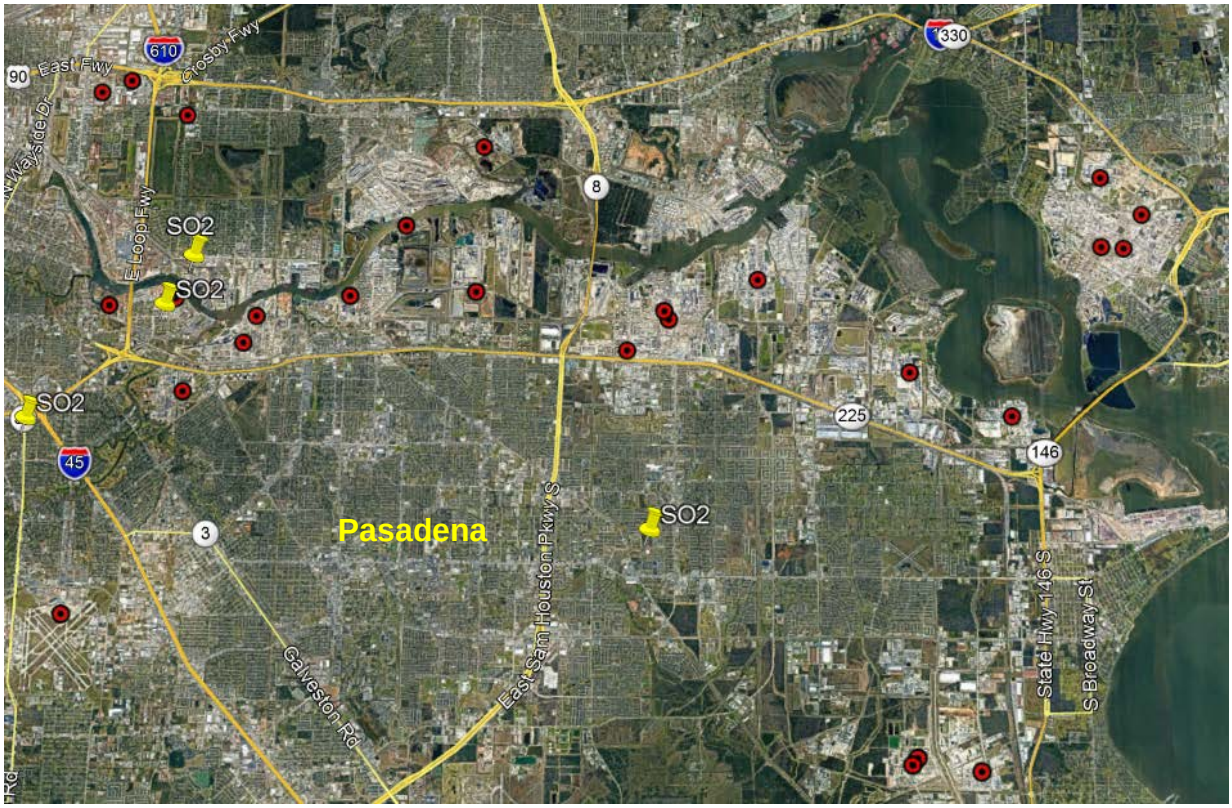
PACAN has repeatedly raised concern that the Port Arthur West 7th Street Gate 2 monitor used to fulfill its DRR requirements vis a vis Oxbow Calcining is not adequately capturing the highest SO_2 levels, particularly in light of Oxbow Calcining's modifications to its plant. The monitor is not located at one of the highest ranked receptors noted in **Figure 50.**

Pasadena and Surrounding Communities Concerns

As discussed above, the City of Pasadena suffers from a lack of adequate monitoring. The city contains and is adjacent to a number of facilities that emit SO_2 and sulfur compounds in large quantities and should have at least one SO_2 monitor to ensure that citizens are protected from these emissions. The following map, identified as **Figure 51**, shows the location of sulfur-emitting facilities (in red), and existing SO_2 monitors (in yellow).

[99] Texas Commission on Environmental Quality, PA Report, Air Modeling for 2019 Air Monitoring Network Plan (June 21, 2019).

Figure 51: SO_2 Monitors and Facilities near Pasadena[100]



Several of these facilities near Pasadena are major emitters of SO_2. For example, in 2014 Exxon's Baytown Refinery released 2,203 tons of SO_2, Pasadena Refining System's Refinery released 1,064 tons of SO_2, Eco-services' Houston Plant released 918 tons of SO_2, Motiva's Houston Refinery released 366 tons of SO_2, and Arkema's Houston Plant released 372 tons of SO_2, among many others.[101] Despite their proximity to this collection of high-emitting facilities, most residents of Pasadena live three to five miles from the nearest SO_2 monitors in either Manchester or Deer Park.

Several members of CPC have smelled and continue to smell the rotten-egg odor that is indicative of SO_2 pollution. SO_2 is clearly in the air, but without any monitors it is impossible to know exposure levels. The community deserves to know if the air they are breathing contains harmful levels of SO_2, and TCEQ has a duty to collect and share that information. An SO_2 monitor in central Pasadena would enable TCEQ to "measure typical concentrations in areas of

[100] Monitor data from Texas Commission on Environmental Quality, Air Monitoring Sites, GeoTAM Map Viewer, https://www.tceq.texas.gov/airquality/monops/sites/air-mon-sites.
[101] U.S. Environmental Protection Agency, 2014 National Emissions Inventory Report, available at https://gispub.epa.gov/neireport/2014/.

high population density," and would further the monitoring goal of providing "air pollution data to the general public in a timely manner."[102]

C. Lead (Pb)

Lead is a soft, dense, naturally occurring metal that has long been used in a wide variety of applications. Exposure to lead in the ambient air can be harmful to human health. Lead exposure can severely harm much of the human body. Exposure can harm the nervous system, kidney function, immune system, reproductive and development systems, and the cardiovascular system.[103] It can also harm the capacity of blood to carry oxygen throughout the body. Infants and children are especially at risk to lead related harms.[104] Those exposed to lead at a young age may develop behavioral problems and learning deficits.[105]

Lead is commonly used in the manufacture of building materials, lead-acid batteries, ammunition, weights, medical equipment, and coatings for high-voltage power cables. Sources that contribute to lead in the ambient air include smelters, metals processing, mining operations, waste incinerators, battery recycling, and the production of lead shot and fishing sinkers.[106] Lead is also released by the burning of coal, oil, solid waste, and the use of leaded aviation gasoline in piston engine powered aircraft. Prior to the phase-out of leaded gasoline between 1973 and 1996, motor vehicles were the largest source of lead in the atmosphere. It can also be found in water pipes, as well as homes built before 1978, when lead-based paint was used in construction.[107] When lead-based paint peels and cracks, it makes lead dust, which can be harmful when inhaled, especially by children.[108]

Fifth Ward Area Concerns

TCEQ should add lead monitoring to Fifth Ward to evaluate the community's exposure to lead because there are concentrated sources of lead present in the area, e.g., the number of metal recycling facilities surrounding the community as noted above in Section II-E. Lead in the air is a problem not only because people may breathe it in, but also because people, particularly

---

[102] 40 C. F. R. 58 Appx. D 1.1.1(b), 1.1 (a).

[103] U.S. Environmental Protection Agency, Basic Information about Lead Air Pollution, https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution#health.

[104] U.S. Environmental Protection Agency, Basic Information about Lead Air Pollution, https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution#health.

[105] U.S. Environmental Protection Agency, Basic Information about Lead Air Pollution, https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution#health.

[106] U.S. Environmental Protection Agency, Basic Information about Lead Air Pollution, https://www.epa.gov/lead-air-pollution/basic-information-about-lead-air-pollution#health.

[107] U.S. Centers for Disease Control and Prevention, Sources of Lead Exposure, https://www.cdc.gov/nceh/lead/prevention/sources.htm.

[108] U.S. Centers for Disease Control and Prevention, Sources of Lead Exposure, https://www.cdc.gov/nceh/lead/prevention/sources.htm.

children, can swallow lead dust that has settled onto surfaces like soil, dust, and water. Lead in soil and dust stays around for many years because it does not decay or decompose.

D. Ozone (O_3)

As the main ingredient of "smog", ground level ozone is a harmful air pollutant which negatively affects human health and the environment. Breathing O_3 can trigger a variety of health problems including chest pain, coughing, throat irritation, and airway inflammation.[109] It can also reduce lung function and harm lung tissue.[110] O_3 exposure can worsen bronchitis, emphysema, and asthma, leading to increased medical care needs and expenses.[111] People most at risk of harm from breathing O_3 include those with asthma, children, older adults, and people who are active outdoors, including outdoor workers.[112] In addition, people with certain genetic characteristics and people with reduced intake of certain nutrients, such as vitamins C and E, are at greater risk of harm from O_3 exposure.[113]

Due to the serious consequences of ground level ozone, it is critically important that levels of O_3 be sufficiently monitored in environmental justice communities such as Northeast Houston, the Pleasantville Area, Port Arthur, the east side of Beaumont, and Brazoria County. All these communities already are vulnerable and have compromised health and limited access to health care due to other social and economic factors.

Brazoria County Concerns

As was explained above, the EPA's redesignation of the Houston-Galveston-Brazoria County area from "serious" to "severe" is cause for concern in the Freeport community. This concern about ozone pollution and air quality justifies adequate monitoring in the region to apprise the local community of their air quality. According to Better Brazoria's members, the Clute monitor was originally thoughtfully placed and brought online in 1974 to address regional concerns. Because a monitor was already carefully placed in Clute and previously measured ozone pollution, it would make sense for the TCEQ to add this constituent of concern, back to the Clute monitor to capture the region's ozone emissions more wholistically. Better Brazoria requests that ozone monitoring be reinstated at this monitor, given the EPA's recent significant concerns about NAAQS compliance for ozone in the region.

---

[109] U.S. Environmental Protection Agency, Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution.
[110] U.S. Environmental Protection Agency, Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution.
[111] U.S. Environmental Protection Agency, Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution.
[112] U.S. Environmental Protection Agency, Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution.
[113] U.S. Environmental Protection Agency, Health Effects of Ozone Pollution, https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution.

Pasadena and Surrounding Communities Concerns

Pasadena itself is wholly without any comprehensive monitoring network save the single monitor on the north end of the City. TCEQ can and should remedy this under the proposed network monitoring plan. Any plan to deploy new monitors in and around Pasadena should include ozone tracking capabilities since the amount of exposure is currently unassessed and unknown.

The single monitor in the City of Pasadena does not monitor ozone. The nearest ozone monitors are Park Place, Clinton Dr., Houston Monroe, Seabrook Friendship Park, and Houston Deer Park #2. Without an ozone monitor, Pasadena residents cannot know their exposure levels to ozone. TCEQ should place an ozone-specific monitor in Pasadena to ensure Pasadena residents can address a vital health, safety, and environmental issue that is otherwise undocumented in the area. The recent redesignation of the HGB area to severe would justify additional ozone monitoring in the Pasadena area given the number of facilities contributing to air quality degradation in the immediate area based in Pasadena.

E. Carbon Monoxide (CO)

Exposure to CO "reduces the amount of oxygen that can be transported in a person's blood stream to the body's organs."[114] When the brain, heart, and other critical organs do not receive enough blood, "dizziness, confusion, unconsciousness, and death" can happen.[115] While these severe effects are most usually tied to indoor exposures, outdoor exposure is of "particular concern for people with some types of heart disease."[116] When exercising, working outside, or under increased stressed, "short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain."[117]

North Houston Concerns

As described above, it would be appropriate for TCEQ to place a near-road NO_x monitor along Interstate 45 north of Beltway 8 and south of Richey Road (Exit 64 of Interstate 45). Therefore, it would also be appropriate to collocate a CO monitor at that location.[118] While TCEQ currently locates a CO monitor at the Houston North Loop NO_x near-road monitoring

[114] U.S. Environmental Protection Agency, Basic Information about Carbon Monoxide (CO) Outdoor Air Pollution, https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution.
[115] U.S. Environmental Protection Agency, Basic Information about Carbon Monoxide (CO) Outdoor Air Pollution, https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution.
[116] U.S. Environmental Protection Agency, Basic Information about Carbon Monoxide (CO) Outdoor Air Pollution, https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution.
[117] U.S. Environmental Protection Agency, Basic Information about Carbon Monoxide (CO) Outdoor Air Pollution, https://www.epa.gov/co-pollution/basic-information-about-carbon-monoxide-co-outdoor-air-pollution.
[118] 40 CFR Part 58, Appendix D, 4.2(a).

station, that location, as described below, has 25% fewer daily vehicle trips than the stretch of Interstate 45 north of the Beltway 8 interchange.

F. Large Particulate Matter (PM_{10})

Particulate matter (PM) refers to microscopic particles in the atmosphere that are hazardous to human health. PM, sometimes referred to in everyday language as soot, dust, or smoke, consists of very small solid particles or liquid droplets suspended in the air.[119] While some PM can be seen with the naked eye, some are so small that they can only be seen by an electron microscope.[120] The smaller the particles, typically the more threatening they are to human health—smaller particles are more capable and likely to penetrate deep into the respiratory system and lodge themselves into a person's lungs.[121] Recent studies indicate PM can have many effects on the human body, including:

- Cause lung irritation, leading to increased permeability in lung tissue;
- Aggravate the severity of lung disease, causing rapid loss of airway function;
- Cause inflammation of lung tissue, resulting in the released of chemical which can negatively impact heart function;
- Cause changes in blood chemistry that can result in clots which may lead to heart attacks; and
- Increase susceptibility to viral and bacterial pathogens leading to pneumonia in vulnerable persons unable to clear those pathogens and infections.

The NAAQS regulate both $PM_{2.5}$ and PM_{10}. $PM_{2.5}$—those with a diameter of 2.5 micrometers or less—are considered of greatest health concern. Still, PM_{10}—those with a diameter of 10 micrometers or less—are considered inhalable and can negatively impact human health. PM can also get into a person's bloodstream. TCEQ must ensure its monitoring plan adequately monitors both $PM_{2.5}$ and PM_{10}.

PM is also the main cause of reduced visibility in the United States. Just as other criteria pollutants are precursors of O_3, including SO_x, NO_x, VOCs, these criteria pollutants are precursors of PM. Other chemicals such as ammonia are also considered precursors to PM. Thus, while facilities may directly emit PM, PM may be formed by other emissions and TCEQ must be mindful of this when it anticipates or models future PM concentrations.

---

[119] U.S. Environmental Protection Agency, Particulate Matter Basics, What Are the Harmful Effects of PM, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#effects.
[120] U.S. Environmental Protection Agency, Particulate Matter Basics, What Are the Harmful Effects of PM, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#effects.
[121] U.S. Environmental Protection Agency, Particulate Matter Basics, What Are the Harmful Effects of PM, https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#effects.

Beaumont Area Concerns

TCEQ is required to place 0-1 PM_{10} monitors in the Beaumont-Port Arthur area.[122] The Draft AMNP proposes 0 such monitors in the area as part of the plan, rather than electing to place at least 1. A PM_{10} monitor should be located at the Beaumont Mary site or a new near-road monitor located near Interstate-10, as discussed above. As noted in the regulations, '[p]eople moving through downtown areas or living near major roadways or stationary sources, may encounter particle pollution that would be adequately characterized by measurements" at the middle scale. Neighborhood scale monitors can be appropriate for "areas where people commonly live and work for extended periods."[123]

As discussed above, the Charlton-Pollard neighborhood and East Side of Beaumont meet these criteria. Interstate 10 through downtown Beaumont is one of the state's busier roadways and the area has numerous other PM sources including many railroads, the Port of Beaumont, and major industrial facilities. Additionally, the residents of Beaumont's East Side are particularly susceptible and vulnerable to health issues.

Fifth Ward Area Concerns

Similarly, Progressive Fifth Ward is appreciative of TCEQ's recognition of the need for air monitoring in their Fifth Ward community. However, these monitors are only helpful if actually installed. It has been two years since TCEQ announced its intention to install these monitors, and Progressive Fifth Ward wants to see the monitors installed by the end of December 2024 as represented in the 2024 AMNP.

Dyersforest & East Aldine Area Concerns

Given East Aldine and Dyersforest both qualify as at-risk communities and have a disproportionate number of concrete and other aggregate facilities in their communities, these communities request that a FEM be placed in these communities to monitor for PM_{10}.

G. Small Particulate Matter ($PM_{2.5}$)

$PM_{2.5}$ are fine inhalable particles, with diameters that are generally 2.5 micrometers and small. These airborne particles are small enough to travel deeply into the respiratory tract reaching the lungs.[124] $PM_{2.5}$ generally consists of soot, which is generally made up of elemental organic carbon from sources including soil and sources of sulfates, nitrates as well as other ionic

[122] Texas Commission on Environmental Quality, 2024 Draft Air Monitoring Network Plan, at 19.
[123] 40 C.F.R. 58, Appendix D, 4.6(b)(3).
[124] U.S. Environmental Protection Agency, Health and Environmental Effects of Particulate Matter (PM), https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm.

species formed in the atmosphere.[125] Exposure to $PM_{2.5}$ can have adverse health impacts, including: premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and/or increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing.[126] Sources of $PM_{2.5}$ include: unpaved roads, construction sites, smokestacks, fires, concrete batch plants.[127]

On February 7, 2024, EPA strengthened the primary (or health-based) standard National Ambient Air Quality Standards (NAAQS) for $PM_{2.5}$ from 12 micrograms per cubic meter to 9 micrograms per cubic meter.[128] This change reflects the new science available identifying the health harms caused by particle pollution.[129] EPA stated that this strengthened standard will result in "significant public health net benefit that could be as high as "$46 billion in 2032."[130] To develop this final rule, EPA considered "thousands of studies"—including "information available on how particle pollution affects children, older adults, people with asthma, people with heart and other respiratory problems, and communities of color and low socioeconomic status populations."[131] The studies informing EPA's strengthened standard support a causal relationship between long and short term exposures to $PM_{2.5}$ and cardiovascular, respiratory, nervous system effects and cancer.[132]

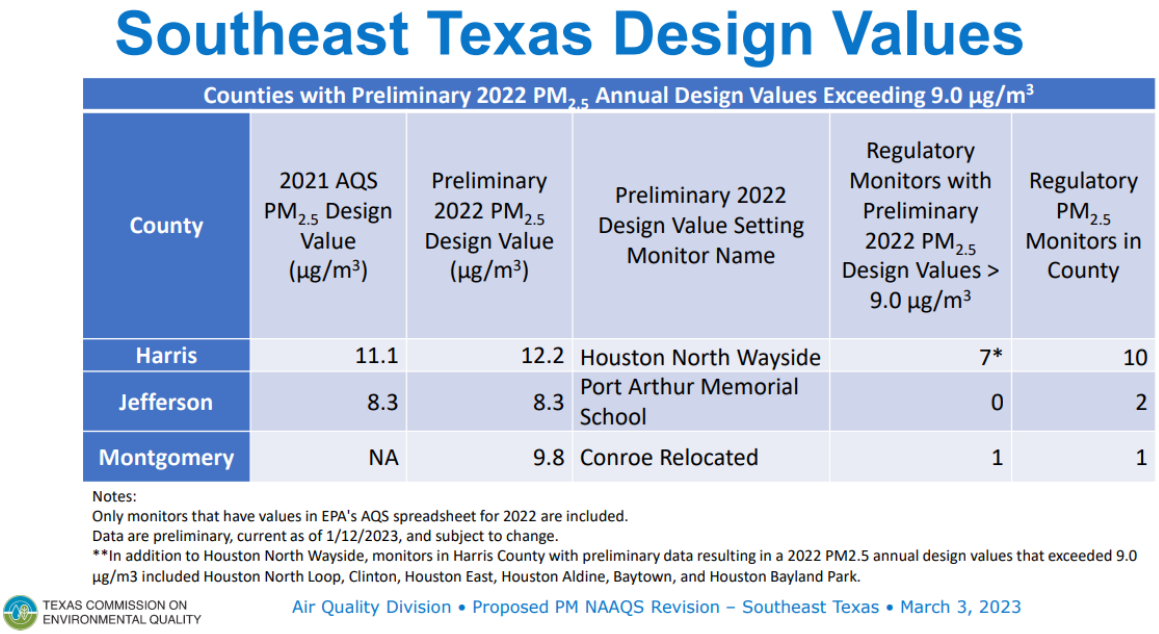
According to the EPA, Harris County is predicted not to meet the new more stringent $PM_{2.5}$ standards.[133] Because of this predicted failure, it is paramount that overburdened communities have sufficient FEM monitors in place so that the TCEQ and EPA can make the most informed permitting decisions and issue permits with strong controls in place.

---

[125] U.S. Environmental Protection Agency, $PM_{2.5}$ Advance Path Forward 2018 Update Final at 9 (2018), https://www.epa.gov/sites/default/files/2018-10/documents/update_2018.plan_.pdf.
[126] U.S. Environmental Protection Agency, Health and Environmental Effects of Particulate Matter (PM), https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm.
[127] U.S. Environmental Protection Agency, Health and Environmental Effects of Particulate Matter (PM), https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm.
[128] U.S. Environmental Protection Agency, Final Reconsideration of the National Ambient Air Quality Standard for Particulate Matter, Final Rule to Strengthen the National Air Quality Health Standard for Particulate Matter Fact Sheet, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-overview.pdf.
[129] U.S. Environmental Protection Agency, Final Reconsideration of the National Ambient Air Quality Standard for Particulate Matter (PM), https://www.epa.gov/pm-pollution/final-reconsideration-national-ambient-air-quality-standards-particulate-matter-pm.
[130] U.S. Environmental Protection Agency, Final Reconsideration of the National Ambient Air Quality Standard for Particulate Matter, Final Rule to Strengthen the National Air Quality Health Standard for Particulate Matter Fact Sheet, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-overview.pdf
[131] U.S. Environmental Protection Agency, Final Reconsideration of the National Ambient Air Quality Standard for Particulate Matter, Final Rule to Strengthen the National Air Quality Health Standard for Particulate Matter Fact Sheet, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-overview.pdf
[132] U.S. Environmental Protection Agency, Final Reconsideration of the National Ambient Air Quality Standard for Particulate Matter, Final Rule to Strengthen the National Air Quality Health Standard for Particulate Matter Fact Sheet, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-overview.pdf
[133] U.S. Environmental Protection Agency, EPA Projects 52 Counties would not Meet the Strengthened Standard in 2032 (pdf), https://www.epa.gov/system/files/documents/2024-02/projected-county-list-2032-for-web.pdf

Additionally, because of this regulatory change, TCEQ identified monitors in and around Harris County with design values exceeding 9.0 µg/m3.

Figure 52[134]



Southeast Texas Design Values

Counties with Preliminary 2022 $PM_{2.5}$ Annual Design Values Exceeding 9.0 µg/m³

County	2021 AQS $PM_{2.5}$ Design Value (µg/m³)	Preliminary 2022 $PM_{2.5}$ Design Value (µg/m³)	Preliminary 2022 Design Value Setting Monitor Name	Regulatory Monitors with Preliminary 2022 $PM_{2.5}$ Design Values > 9.0 µg/m³	Regulatory $PM_{2.5}$ Monitors in County
Harris	11.1	12.2	Houston North Wayside	7*	10
Jefferson	8.3	8.3	Port Arthur Memorial School	0	2
Montgomery	NA	9.8	Conroe Relocated	1	1

Notes:
Only monitors that have values in EPA's AQS spreadsheet for 2022 are included.
Data are preliminary, current as of 1/12/2023, and subject to change.
**In addition to Houston North Wayside, monitors in Harris County with preliminary data resulting in a 2022 PM2.5 annual design values that exceeded 9.0 µg/m3 included Houston North Loop, Clinton, Houston East, Houston Aldine, Baytown, and Houston Bayland Park.

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Air Quality Division • Proposed PM NAAQS Revision – Southeast Texas • March 3, 2023

In formulating the new NAAQS for $PM_{2.5}$, the EPA has consistently recognized that populations with demographics similar to the communities represented in these comments are the most at-risk.

- EPA acknowledged that, "the highest concentrations in an area tend to be measured at monitors located in areas where the surrounding population is more likely to have lower education and income levels, and higher percentages of minority populations…the intended purposes of the form of the annual standard . . . may not be adequate to avoid substantially greater exposures in some areas, potentially resulting in disproportioned impacts on these potentially vulnerable subpopulations."[135]

- Noting that the FCAA requires the Administrator to set a standard that "reduces risks sufficiently so as to protect public health, including the health of at-risk populations, with an adequate margin of safety."[136]

[134] Texas Commission on Environmental Quality, Air Quality Division, Southeast Texas Design Values for $PM_{2.5}$ (March, 3 2023), https://www.tceq.texas.gov/downloads/air-quality/sip/pm/designations/naaqs-pm25-2012/pm-naaqs-revision-meeting_houstonsetx_final.pptx, at 12.
[135] 71 FR 61, 29 (Oct. 17, 2006).
[136] 78 FR 3086, 3161 (Jan. 15, 2013).

- And, the EPA again acknowledged, "'[t]here is strong evidence demonstrating that black and Hispanic populations, in particular, have higher $PM_{2.5}$ exposures than non-Hispanic white populations' and that 'there is consistent evidence across multiple studies demonstrating an increase in risk for nonwhite populations.'"[137]

- EPA again, noted that "[t]he scientific evidence evaluated . . . indicates that sub-populations at potentially greater risk from $PM_{2.5}$ exposures include: children, lower socioeconomic status . . . populations, minority populations (particularly Black populations), and people with certain preexisting diseases (particularly cardiovascular disease and asthma)."[138]

Notably, this rule change also introduced an environmental justice factor that would be included in the design criteria for communities who may be at an increased risk of adverse health impacts from $PM_{2.5}$ exposure.[139] And, while EPA did not change requirements associated with the number of ***minimally*** required monitors, the new standard for $PM_{2.5}$ will increase the number of minimally required monitors under the existing requirements.[140] Importantly, these rules only govern the minimum number of monitors, Commenters believe additional monitors are necessary to adequately evaluate the air quality in certain at risk communities.

Currently, EPA determines the minimum number of monitors for an area based on population and the expected air quality NAAQS designation. $PM_{2.5}$ monitoring requirements are as follows: one monitor at the site of expected maximum $PM_{2.5}$ concentrations, if the population is over 1 million an additional monitor must be located at a near-road site, and a third monitor will be required in an area of particularly poor air quality.[141] With the more stringent $PM_{2.5}$ standard, the EPA also added a monitoring requirement, that the monitor be placed in an at-risk community as defined above.[142] Commenters request below additional monitoring in certain at risk communities for the extreme risk that $PM_{2.5}$ is posing to community health and well-being.

Fifth Ward Area Concerns

As mentioned above, Progressive Fifth Ward is appreciative of TCEQ's recognition of the need for air monitoring in their Fifth Ward community. However, these monitors are only helpful if actually installed. It has been two years since TCEQ announced its intention to install

[137] 85 FR 82884, 82703 (Dec. 18, 2020).
[138] 88 FR 5558, 5673 (Jan. 27, 2023).
[139] 88 FR 5558, 5673 (Jan. 27, 2023).
[140] 88 FR 5558, 5673 (Jan. 27, 2023); *see also* U.S. Environmental Protection Agency, EPA Air Monitoring for Fine Particulate Pollution ($PM_{2.5}$) Fact Sheet, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-monitoring-fact-sheet.pdf.
[141] U.S. Environmental Protection Agency, Air Monitoring for Fine Particulate Pollution ($PM_{2.5}$) Fact Sheet, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-monitoring-fact-sheet.pdf.
[142] U.S. Environmental Protection Agency, Air Monitoring for Fine Particulate Pollution ($PM_{2.5}$) Fact Sheet, https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-monitoring-fact-sheet.pdf.

these monitors, and Progressive Fifth Ward wants to see the monitors installed by the end of December 2024 as represented in the 2024 AMNP.

Dyersforest & East Aldine Area Concerns

Given East Aldine and Dyersforest both qualify as at-risk communities and have a disproportionate number of concrete and other aggregate facilities in their communities, these communities request that a FEM monitor be placed in these communities to monitor for $PM_{2.5}$.

Pasadena and Surrounding Communities Concerns

The City of Pasadena does not currently have any PM monitors within its city limits. The nearest monitors that track either type of PM are the Park Place Monitor ($PM_{2.5}$) and the Clinton Dr. Monitor (PM_{10} and $PM_{2.5}$), both located outside Pasadena's city limits. As previously mentioned, however, Pasadena residents face a high risk of respiratory health issues, including air toxics cancer. Thus, PM monitoring in Pasadena is necessary to protect Pasadena residents' health.

The PM_{10} measurements at the Clinton Dr. Monitor have the highest measured concentrations during the 2016-18 evaluation period.[143] Because this is the only monitor along the Houston Ship Channel that is measuring for PM, CPC is of the opinion that TCEQ can shore up its network by increasing the amount of PM monitors in the area, starting with Pasadena. CPC urges the TCEQ to augment the Clinton Dr., Houston Monroe, Seabrook Friendship, and Houston Deer Park #2 monitors by deploying more monitors capable of tracking both PM_{10} and $PM_{2.5.}$ These enhancements can be accomplished by installing monitors in the cities of Pasadena, La Porte, and Galena Park. CPC urges the TCEQ to install these monitors not only along the ship channel, where there is the highest concentration of industry, but also away from the Ship Channel and within residential areas of each of the respective municipalities. CPC also encourages TCEQ to consider the placement of PM monitoring capabilities in the Houston community of Manchester. The monitor currently deployed in Manchester is often not functional with regard to its non-methane organic compounds monitoring capabilities, which is an ongoing issue that merits immediate attention.

[143] Texas Commission on Environmental Quality, 2024 Draft Annual Monitoring Network Plan, 2019, at 16.

Pleasantville Area Concerns from ACTS

Reduction in Filter-Based PM2.5 Measurement at Clinton

In their draft monitoring plan, TCEQ indicates that they will reduce the frequency of filter-based FRM[144] $PM_{2.5}$ measurements from once daily to once every six days at their Clinton Dr. monitoring site. The reduction in FRM measurements will happen in conjunction with the installation of a new continuous FEM instrument at the site.

We oppose the reduction in filter-based measurements at the Clinton site and recommend keeping the FRM measurements at once-daily and increasing the frequency of speciation analysis done at the site. In February of this year, the EPA updated its $PM_{2.5}$ annual NAAQS value from 12 $\mu g/m^3$ to 9 $\mu g/m^3$, a change that will place much of Houston's east end in non-attainment status. Data from the continuous $PM_{2.5}$ non-NAAQS comparable monitor at Clinton showed an annual average of 11.5 $\mu g/m^3$ in 2023, which exceeds the new threshold. In their draft plan, TCEQ did not give a rationale or justification for reducing filter-based sampling at the site, and we have concerns that reducing filter-based sampling while we have evidence that much of Houston will be in violation of new EPA standards handicaps our communities and regulators as we try to advocate for cleaner air and comply with NAAQS requirements, respectively.

Unlike the proposed continuous FEM monitor, filter-based PM samples offer the unique ability to analyze what specific PM components are in the pollution measured. This speciated PM data then allows for a better understanding of the pollution sources contributing most to the pollution burden, which will be key in meeting the new NAAQS standard. Currently TCEQ and the Houston Health Department public speciated analysis of the Clinton FRM data every six days. We recommend that frequency be increased, and that filter-based samples continue to be collected daily at the Clinton site.

Public Citizen Concerns

Even with TCEQ's stated intention to upgrade monitoring capabilities at Clinton Dr., Public Citizen echoes ACTS' concerns about making changes at the Clinton Dr. Monitor. Historically, the readings for fine Particulate Matter at the Clinton Drive monitor have been well above the NAAQS, and the monitor has had some of the highest readings in the region. We are concerned that any change in the monitoring parameters at the Clinton Drive site might exclude

[144] Federal Reference Method (FRM) and Federal Equivalent Methods (FEM) refer to EPA's formal process for the evaluation of technologies proposed for use as Federal Reference Method (FRM) or Federal Equivalent Method (FEM) monitors that are used for monitoring compliance with the National Ambient Air Quality Standards (NAAQS). FRM and FEM monitors are considered the gold standard for air quality monitoring. *See* EPA, Frequent Questions About Air Sensors, https://www.epa.gov/air-sensor-toolbox/frequent-questions-about-air-sensors#:~:text=EPA%20has%20a%20formal%20process%20for%20the%20evaluation,considered%20the%20gold%20standard%20for%20air%20quality%20monitoring.

its data from those considered for regulatory purposes. Even a small gap in regulatory data could cause the Clinton site to be excluded for NAAQS compliance purposes for three years, until sufficient data had been collected again. This data from the Clinton Dr. Monitor is important to reflect the region's air quality.

The new proposed FRM monitor at Clinton Dr. should be a regulatory monitor. Under applicable EPA guidance, a monitor which is intending to use FRM/FEM/ARM method (40 C.F.R. Part 58 Appendix C), meets the siting requirements (40 C.F.R. Part 58, Appendix E), and meets the QA requirements specified by EPA (40 C.F.R. Part 58, Appendix A) should be considered a regulatory monitor. For regulatory and enforcement purposes, the data obtained from the new FRM monitor should be included with prior data collected at the Clinton Dr. Monitor. There should not be a three-year waiting period for this data from the FRM monitor to become actionable if existing data at the site reveals NAAQS violations for $PM_{2.5}$.

H. Volatile Organic Compounds (VOCs)

VOCs are gases which may adversely affect the health of those exposed to them in the short and long-term. VOCs combine with nitrogen oxides and sunlight to create ground-level ozone and smog; breathing ground-level ozone is harmful for any person, but especially for the elderly, children, and those with health issues like asthma. VOCs also directly cause breathing difficulty and irritation to the respiratory system. Finally, VOCs encompass many harmful toxic or carcinogenic pollutants that are also regulated as HAPs, discussed below.

Hazardous Air Pollutants (HAPs) are known as toxic air pollutants or air toxics which cause or may cause cancer or other serious health effects such as "damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory and other health problems." Examples of HAPs include benzene, perchloroethylene, and methylene chloride. These three chemicals are all volatile organic compounds also known as VOCs. HAPs/VOCs are significant challenges across the communities represented in these comments. VOCs react with nitrogen oxide and can form ozone.[145] Sources of VOCs include car exhaust, gasoline powered lawn equipment, gas stations, industrial coating operations, printing shops, paints, chemical manufacturing, refineries, factories, and metal production.[146]

Pasadena and Surrounding Communities Concerns

As already mentioned, the only air monitor in Pasadena is a VOC monitor. However, as detailed above, the monitor does not ensure adequate VOC monitoring for facilities in Pasadena

[145] U.S. Environmental Protection Agency, Volatile Organic Compound Exemptions, https://www.epa.gov/ground-level-ozone-pollution/volatile-organic-compound-exemptions
[146] U.S. Environmental Protection Agency, Technical Overview of Volatile Organic Compounds, https://www.epa.gov/indoor-air-quality-iaq/technical-overview-volatile-organic-compounds

that are not located near the Pasadena Richey Elementary monitor, including ITC Pasadena. Thus, more VOC monitors in Pasadena are necessary.

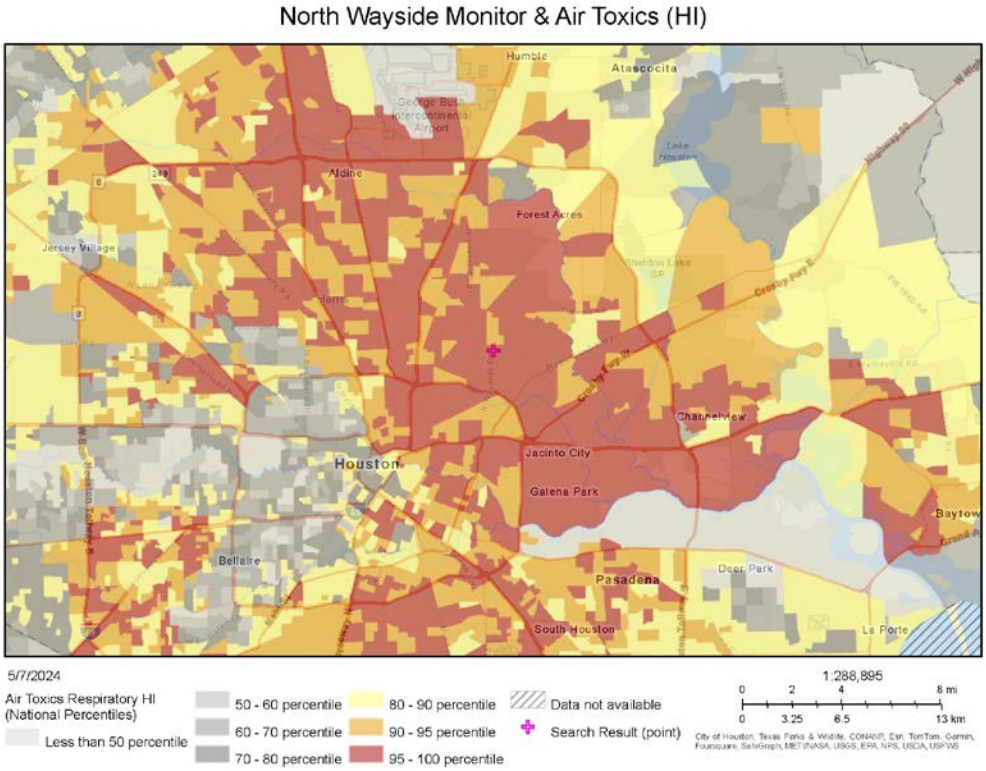
More monitors would help protect fence line communities in and around Pasadena who bear the brunt of exposure to VOC emissions whenever nearby industrial facilities malfunction or weather a disaster. During Hurricane Harvey, for example, elevated benzene readings were measured by the EPA and a private monitoring firm hired by Environmental Defense Fund and Air Alliance Houston, who both did mobile monitoring in the Manchester area in early September 2017 after the nearby Valero Refinery suffered a damaged storage tank during the storm. After reviewing the air monitoring results, the EPA acknowledged Valero had significantly underestimated the amount of benzene that leaked out and had failed to fully report the community's exposure. Placing VOC monitors in the ship channel communities and Pasadena is important to making sure that these readings are captured, and the community and regulatory agencies are fully informed of these impacts.

Northeast Houston Concerns

Local community members on and near Dockal Road are often complaining about strong odors and smells emanating from Gold Star Metals. Gold Star Metals is estimated to be only .12 miles from the North Wayside Monitor.

According to a research project conducted by the University of Texas Health and other partners, metal air pollution was evaluated near CMC Metal Recycling located at 2015 Quitman Street, Houston, TX 77026. This study rated the Hazard Index (HI) created from the metal emissions at this site and found that the HI for developing nasal irritation and upper respiratory distress ranged from 0.4 to 1.6. The HI for developing bronchitis, lung inflammation and difficulty breathing ranged from 0.4 to 1.6. And, generally, the study found: "the risks for diseases other than cancer would decrease if metal air pollution decreases; the risks would increase if metal air pollution increases." Taking this study as true and applying to similarly situated communities in Northeast Houston where there are many more metal facilities, including: Gold Star Metals, Steel Castings, Hydril Premium Connections, Modern Welding Co Houston Plant, and Mauser Corp—these Northeast Neighborhoods are legitimately concerned about their air quality. Below is a map illustrating the Hazard Index in Northeast Houston as demarked by the North Wayside monitor.

***Figure 52: Hazard Index in Northeast Houston*[147]**



Further, metal facilities are located near to the North Wayside Monitor, which has documented 2012 and 2024 NAAQS exceedances for $PM_{2.5}$. Because the North Wayside Monitor does not currently evaluate other concerning pollutants, the Northeast Neighborhoods represented in these comments encourage TCEQ to also collect VOC data at the North Wayside monitor so that the adjacent communities can understand the health impacts of living near facilities with metal emissions. Moreover, recently, TCEQ has collected mobile monitoring data, and this data showed extremely high concentrations of Toluene, a specific VOC, at Mesa and Ley Road near the North Wayside monitor. Where 9 parts per billion (ppbv) is the safe exposure level to VOCs—the mobile monitor picked up 94 ppbv Toluene emissions.[148]

Therefore, the communities in Northeast Houston are requesting that VOC monitoring be added to the North Wayside Monitor.

[147] U.S. Environmental Protection Agency, EJScreen: Environmental Justice Screening and Mapping Tool, https://www.epa.gov/ejscreen.

[148] "In these neighborhood, the SMART-RA van performed 4 surveys, with the Duvas measuring an individual VOC concentration no greater than 9 ppbv, aside from Toluene which was measured at 94 ppbv at the corner of Mesa and Ley. The SMART-RA van also performed stationary monitoring at one location for approximately 1.25 hours." (Jan. 24, 2023 Email from Marie Stephenson re: RE: FWP2301 20230126 Monitoring Update.

IV. ADDITIONAL AIR MONITORING CONCERNS

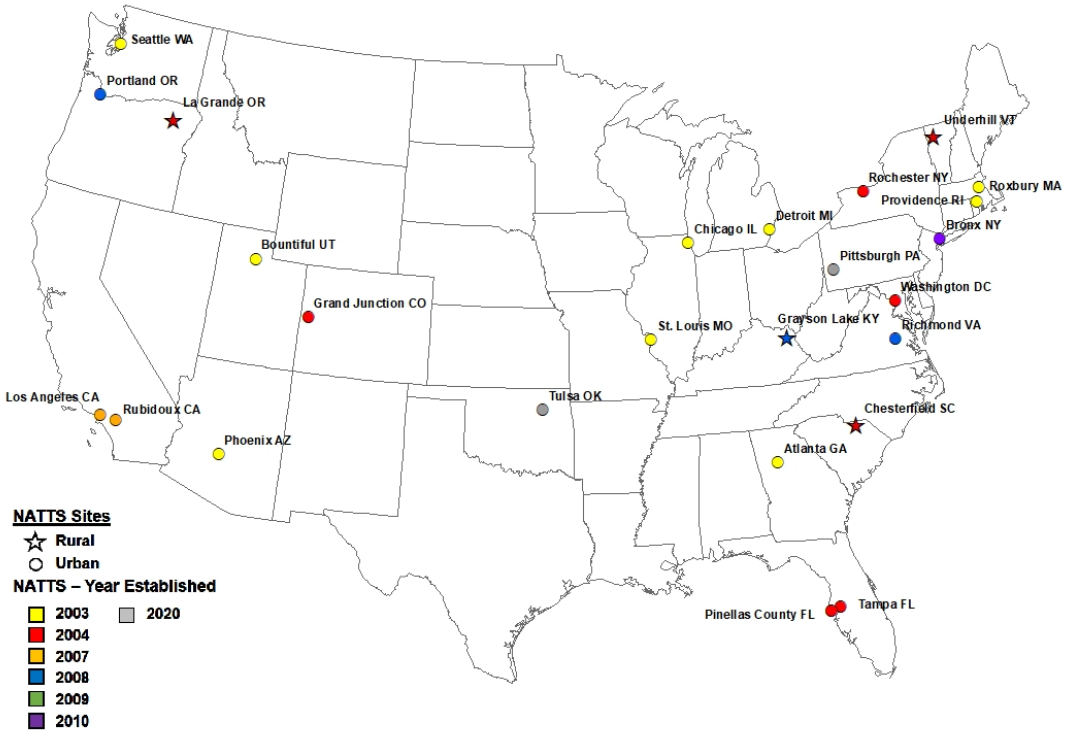
A. Ethylene Oxide (EtO)

Ethylene Oxide (EtO) is a colorless gas that is used to make products like antifreeze, textiles, plastics, detergents and adhesives.[149] EtO is also used to sterilize medical and dental equipment as well as herbs, dried vegetables, sesame seeds and walnuts.[150] Acute short-term exposure to EtO may not result in immediate adverse health consequences, but it can cause headache, dizziness, nausea, fatigue, respiratory irritation, vomiting or gastrointestinal distress.[151] Long-term exposure, however, can cause cancer. This exposure may happen by living, working, going to school or daycare near a facility that emits EtO, and various factors increase a person's risk. For example, the distance from the individual to the emitter, and whether the person being exposed is a child or an adult. [152]

Although EtO is a concerning carcinogen, very little monitoring exists, and—in fact—there is no monitoring in Texas. Below is an image of the National Air Toxics Trends Station Network developed to monitor for long-term air toxics, including EtO, as illustrated, there are no National Air Toxics Trends Sites in Texas, currently.

[149] U.S. Environmental Protection Agency, Our Current Understanding of Ethylene Oxide (EtO), https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/our-current-understanding-ethylene-oxide-eto
[150] U.S. Environmental Protection Agency, Our Current Understanding of Ethylene Oxide (EtO), https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/our-current-understanding-ethylene-oxide-eto
[151] U.S. Environmental Protection Agency, Our Current Understanding of Ethylene Oxide (EtO), https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/our-current-understanding-ethylene-oxide-eto
[152] U.S. Environmental Protection Agency, Our Current Understanding of Ethylene Oxide (EtO), https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/our-current-understanding-ethylene-oxide-eto

***Figure 53: National Air Toxics Trends Sites*[153]**



New Liberty Road Community Development Corporation's Concerns

Despite not being listed on the NAAQS table, Elevated EtO levels pose a grave threat to public health. Three of the most toxic chemicals released include **ethylene oxide**, hexavalent chromium, and nickel, all potent human carcinogens.[154] The EPA's on epidemiological evidence that exposure to ethylene oxide is carcinogenic was shared with TCEQ in 2021. Why? Ethylene oxide is an alkylating agent; it has irritating, sensitizing and narcotic effects. **Chronic exposure to ethylene oxide is also mutagenic.**[155] Ethylene oxide's toxicity is multifaceted, manifesting in irritating, sensitizing, and narcotic effects. Chronic exposure further amplifies its danger, as it is mutagenic and increases the risk of cancer. According to the EPA, even low doses of ethylene

[153] U.S Environmental Protection Agency, National Air Toxics Trends Sites, https://www.epa.gov/amtic/air-toxics-ambient-monitoring

[154] U.S. Environmental Protection Agency, EPA Issues Final Rule to Reduce Toxic Air Pollution from the Synthetic Organic Chemical Manufacturing Industry and the Polymers and Resins Fact Sheet, https://www.epa.gov/system/files/documents/2024-04/chem-sector-final-rule.-overview-fact-sheet_0.pdf, U.S. Environmental Protection Agency, NAAQS Table, https://www.epa.gov/criteria-air-pollutants/naaqs-table; Cheryl Hogue, Chemical and Engineering News, *EPA Affirms ethylene Oxide's health hazards: Agency rejects industry-backed assessment from Texas agency that gas is less toxic*, (Dec. 30, 2022) https://cen.acs.org/environment/pollution/EPA-affirms-ethylene-oxides-health/100/web/2022/12

[155] Wikipedia, Ethylene Oxide, Physiological Effects, https://en.wikipedia.org/wiki/Ethylene_oxide#Physiological_effects

oxide inhalation over a lifetime could significantly elevate an individual's cancer risk. The EPA estimated in 2016 that for low doses, **the inhalation of ethylene oxide for a lifetime could increase an individual's lifetime cancer risk by as much as 3.0 × 10−3 per µg/m3** (without considering that early-life exposures are likely more potent).[156] EPA strengthened the 2020 rule by requiring ethylene oxide emission limits to apply at all times, and not allow exemptions for plant malfunctions that cause releases to spike. However, more proactive measures are imperative. We continue to urge both TCEQ and EPA to require facilities to monitor ethylene oxide emissions at their fence lines and submit real-time reporting of release incidents safeguarding neighboring communities from this insidious threat.[157]

V. REQUESTED RELIEF

1. **NOx (Nitrogen Dioxide):**
    a. Harris County: Add near-road NO_2 monitoring along Interstate 45 north of Beltway 8.
    b. Jefferson County: Add NO_2 monitoring in central Beaumont near Interstate 10.
2. **SO_2 (Sulfur Dioxide):**
    a. Jefferson County: Review and properly adjust placement of DRR-required SO_2 monitor near Oxbow Calcining facility in Port Arthur.
    b. Harris County: Add SO_2 monitor in Pasadena area.
3. **O_3 (Ozone):**
    a. Brazoria County: Add O_3 capabilities back to the Clute monitoring site.
    b. Harris County: Add ozone monitor in Pasadena area.
4. **Pb (Lead):**
    a. Harris County: Evaluate lead monitoring needs for Fifth Ward community.
5. **CO (Carbon Monoxide):**
    a. Harris County: Add co-located CO monitor at new near-road NO_2 monitor along Interstate 45 north of Beltway 8.
6. **Particulate Matter:**
    a. Harris County: Commit to installing the new $PM_{2.5}$ and PM_{10} monitors in Fifth Ward and Pleasantville Area before December 31, 2024.
    b. Harris County: Install a monitor that meets Federally Equivalent Method monitoring standards in the East Aldine / Dyersforest area in an at-risk community to evaluate community concerns with concrete facilities.

[156] Wikipedia, Ethylene Oxide, Physiological Effects, https://en.wikipedia.org/wiki/Ethylene_oxide#Physiological_effects.
[157] Katie Watkins, Houston Public Media, Report: Houston Has 10 Of The Most Toxic Industrial Polluters In The U.S. (February 26, 2020), https://www.houstonpublicmedia.org/articles/news/energy-environment/2020/02/26/361978/report-houston-has-10-of-the-most-toxic-industrial-polluters-in-the-u-s/.

c. Harris County: At the Clinton Drive monitor, increase frequency of filter-based FRM $PM_{2.5}$ monitoring and speciation analysis, and continue collecting filter-based samples daily.

7. **VOC (Volatile Organic Compounds):**
   a. Harris County: Commit to installing the new VOC monitor at Pleasantville Elementary before December 31, 2024.
   b. Harris County: Commit to adding VOC monitoring to the North Wayside Monitor in Settegast / East Houston.
   c. Harris County: Commit to installing more VOC monitors in Pasadena and in the Houston Ship Channel communities like Manchester.
8. **Non-Criteria Pollutants:**
   a. **Ethylene Oxide (EtO) Monitoring in Harris County:**
      i. Deploy a EtO monitor that meets Federally Equivalent Method monitoring standards in the Harris County region.
      ii. Require facilities to monitor ethylene oxide emissions at their fence lines and submit real-time reporting of release incidents safeguarding neighboring communities from this insidious threat.

VI. CONCLUSION

For these reasons, LSLA, on behalf of its twelve group clients participating in these comments, and the other commenters undersigned below, hope TCEQ will reflect these comments in its final 2024 air monitoring network plan and would appreciate a complete response from TCEQ in response to the comments and concerns raised in this letter. Please contact the undersigned counsel if you have any questions or need clarification regarding the comments contained herein.

Respectfully submitted,

LONE STAR LEGAL AID

Amy Catherine Dinn, Litigation Director
Chase Porter, Staff Attorney
Caroline Crow, Staff Attorney
Noor Mozaffar, Staff Attorney
P.O. Box 398
Houston, TX 77001-0398
Telephone: (713) 652-0077 ext. 8108
Facsimile: (713) 652-3141
adinn@lonestarlegal.org
cporter@lonestarlegal.org
ccrow@lonestarlegal.org
nmozaffar@lonestarlegal.org

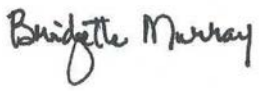
ATTORNEYS FOR PORT ARTHUR COMMUNITY ACTION NETWORK, WESTRY MOUTON PROJECT, SOUTHEND CHARLTON-POLLARD GREATER HISTORIC COMMUNITY, CARING FOR PASADENA COMMUNITIES, SUPER NEIGHBORHOOD 48 TRINITY GARDENS / HOUSTON GARDENS, SUPER NEIGHBORHOODS 49 / 50, PLEASANTVILLE AREA SUPER NEIGHBORHOOD 57, PROGRESSIVE FIFTH WARD COMMUNITY ASSOCIATION, DYERSFOREST HEIGHTS CIVIC CLUB, EAST ALDINE CIVIC ASSOCIATION, HOUSTON DEPARTMENT OF TRANSFORMATION, AND BETTER BRAZORIA—CLEAN AIR & WATER

AIR ALLIANCE HOUSTON

LIBERTY ROAD COMMUNITY DEVELOPMENT CORPORATION

COALITION OF COMMUNITY ORGANIZATIONS

ACHIEVING COMMUNITY TASKS SUCCESSFULLY (ACTS)



Bridgette Murray
Founder/Executive Director

PUBLIC CITIZEN

Adrian Shelley
Texas Director
309 E. 11th Street, Ste. 2,
Austin, TX 78701
512.477.1155 (o)
713.702.8063 (c)
ashelley@citizen.org