

19TH JUDICIAL DISTRICT COURT
PARISH OF EAST BATON ROUGE
STATE OF LOUISIANA

RISE ST. JAMES, LOUISIANA BUCKET	*	
BRIGADE, SIERRA CLUB, CENTER FOR	*	
BIOLOGICAL DIVERSITY, HEALTHY	*	Case No.: 694,029
GULF, EARTHWORKS, and NO WASTE	*	
LOUISIANA,	*	Section: 27
Petitioners,	*	
v.	*	Judge: Trudy White
	*	
LOUISIANA DEPARTMENT OF	*	
ENVIRONMENTAL QUALITY,	*	
Defendant.	*	

PETITIONERS’ BRIEF IN SUPPORT OF THEIR PETITION FOR JUDICIAL REVIEW

Petitioners RISE St. James, Louisiana Bucket Brigade, Sierra Club, Center for Biological Diversity, Healthy Gulf, Earthworks, and No Waste Louisiana (collectively, “Petitioners”) respectfully submit this brief in support of their petition for judicial review of the Louisiana Department of Environmental Quality’s (“LDEQ’s”) final January 6, 2020, decision granting a Prevention of Significant Deterioration (“PSD”) Permit and 14 Title V/Part 70 Air Operating Permits to FG LA LLC (“Formosa Plastics”)¹ to construct and operate 14 separate major plants (“Chemical Complex”) in St. James, Louisiana (“Decision”). LDEQ issued all 15 permits pursuant to this single Decision.

INTRODUCTION

LDEQ’s Decision authorizing construction of Formosa Plastics’ Chemical Complex in District 5 of St. James Parish violates the (1) public trustee duty mandated by the Louisiana Constitution, (2) Clean Air Act (and state regulations implementing the Act), and (3) state statute requiring the agency to consider how its action will impact the Parish master land use plan.

LDEQ is entrusted with making decisions that affect the environment—indeed, the very air that we breathe. As such, the Louisiana Supreme Court made plain that the agency “must act with diligence, fairness and faithfulness to protect this particular public interest in the resources.”

¹ FG LA LLC, the entity to which LDEQ issued the Permits, is part of Formosa Plastics Group, a Taiwanese-based conglomerate.

Save Ourselves v. La. Env'tl. Control Comm'n, 452 So. 2d 1152, 1157 (La. 1984) (interpreting LDEQ's public trustee duty). But instead of acting as a trustee of the environment for the public good, LDEQ side-stepped its legal requirements, allowing Formosa Plastics (an international petrochemical giant based in Taiwan)² to build the country's largest chemical manufacturing complex in the center of Cancer Alley.³ The agency allowed Formosa to violate national air standards, and ignored that this mega-facility would emit over 800 tons of toxic pollution and cause serious environmental and health impacts to a majority Black area that is already overburdened by industrial pollution.

Area residents packed LDEQ's hearing on its proposed permit decision, unanimously objecting to the Chemical Complex. They told the agency the area is already full of industrial pollution and they cannot bear any more. Indeed, according to a study sponsored by The Advocate, Formosa Plastics' site is located in an area that is already inundated with more cancer-causing chemicals than almost anywhere in the country. The study concludes that Formosa Plastics' toxic air pollutants would double to triple area residents' exposure to cancer-causing chemicals. This finding is not surprising given that Formosa Plastics itself would be among the largest sources of carcinogenic pollutants such as benzene and ethylene oxide in the United States, or that its ozone-forming pollutants and soot violate the Clean Air Act and state regulations implementing the Act.

The agency granted the air permits even though the company was unable to "demonstrate" that the massive amount of air pollution expected from its complex would not "cause or contribute" to violations of national air quality standards set for ozone-forming pollutants and other ubiquitous pollutants such as soot. *See* LAC 33:III.509.K.1; 42 U.S.C. § 7475(a)(3). This mandatory demonstration is at the center of the Clean Air Act's permitting program aimed at managing industrial air pollution to protect public health and the environment.

² FG LA LLC, the entity to which LDEQ issued the Permits, is part of Formosa Plastics Group, a Taiwanese-based conglomerate. Formosa Plastics Group is also the parent company of Formosa Plastics Corporation, U.S.A (FPC). FPC owns and operates Formosa Plastics' existing chemical plants in Baton Rouge and Point Comfort, Texas. Both of these plants, like Formosa Plastics' planned Chemical Complex, make plastics or the building blocks for making plastics. For ease of reference, and because all of these entities are ultimately owned or controlled by the same company, they are referred to collectively as "Formosa Plastics."

³ Cancer Alley is an 85-mile stretch along the Mississippi River from Baton Rouge to New Orleans that is dotted with hundreds of chemical plants among and between mostly historic African American communities.

Formosa Plastics' analysis shows that if the Chemical Complex operates, maximum air pollution concentrations would be much higher than the health-based air standards allow.

Additionally, LDEQ skipped its legally required duty to look at the full impact of its decision and perform a cumulative analysis of toxic air pollutants, and without rational basis. The agency, therefore, has not determined the total toxic load area residents will bear as a result of this project. Record evidence demonstrates that the maximum predicted concentrations of various toxic air pollutants will be above health-based thresholds. For instance, Formosa Plastics' emissions of the potent carcinogen ethylene oxide will exceed the cancer risk threshold set by the federal government in communities near the site. EPA and other governments are limiting this chemical, with one state banning new facilities that release ethylene oxide into the air within 10 miles of a school or park. LDEQ's Decision allows Formosa Plastics to put more ethylene oxide into the air than almost any existing facility in the country. And although an elementary school is just a mile away, LDEQ refuses to require enforceable monitoring of ethylene oxide pollutants along its site boundary (i.e., fenceline).

The agency failed to carry out its public trustee duty to determine "that adverse environmental impacts [of the Chemical Complex] have been minimized or avoided as much as possible consistently with the public welfare" before issuing the permits in numerous other ways. *Save Ourselves v.* 452 So. 2d at 1157. The agency failed to conduct a "balancing [] in which environmental costs and benefits must be given full and careful consideration along with economic, social and other factors." *Id.* In fact, the agency failed to put any adverse effects of its decision on the balancing scale—arbitrarily recognizing the benefits only. For instance, LDEQ failed to recognize that Formosa Plastics' emissions have the potential to create a cancer hotspot, where modeled emissions show concentrations that exceed established cancer risk thresholds in a residential area of District 5. LDEQ also gave zero weight to the social costs that the Chemical Complex will force Black communities in the area to bear. Further, LDEQ failed to grapple in any way with Formosa Plastics' massive greenhouse gas emissions, even though Louisiana is on the frontline of catastrophic harm caused by greenhouse gas-induced warming oceans, sea level rise, and increased storm intensity and flooding.

LDEQ also violated a statutory mandate that agencies "shall consider" a parish's master

plan “before undertaking any activity or action which would affect the adopted elements of the master plan.” La. R.S. § 33:109.1. LDEQ authorized Formosa Plastics to construct what would be the largest chemical complex in the United States on a site that is larger than most Louisiana towns without a single mention of the Parish’s master plan. The record is silent about the impacts Formosa Plastics toxic pollutants would have on an area that the Parish has designated for “Residential Growth” in its master plan, even though those pollutants would turn the area into a cancer risk hotspot and threaten any residential development for that area.

While approving Formosa Plastics’ Chemical Complex at all costs, LDEQ also overlooked the company’s dismal compliance record. Last year, a federal court judge referred to Formosa Plastics as “a serial offender,” finding the company liable for over 1,000 Clean Water Act violations and approving \$50 million in penalties—the highest civil penalty amount in Clean Water Act history.⁴ In Asia, Formosa Plastics caused a chemical spill in Vietnam in 2016, referred to as the country’s worst environmental disaster.⁵ And less than a year ago, an explosion occurred at a Formosa Plastics plant in Taiwan was reportedly heard over 18 miles away.⁶

For these reasons, detailed below, Petitioners ask this Court to vacate LDEQ’s Decision and remand the matter with instructions to cure the violations.

PROCEDURAL HISTORY

Formosa Plastics filed applications with LDEQ for a PSD permit and 14 Title V permits to build and operate a 14-plant chemical complex on a 2,400-acre site adjacent to the community of Welcome and across the Mississippi River from Union.⁷ On May 28, 2019, LDEQ issued a public notice on a proposed PSD permit, 14 proposed Title V permits,⁸ and Formosa Plastics’ Environmental Assessment Statement.⁹

On July 9, 2019, LDEQ held a public hearing on the Formosa Plastics proposed permits,

⁴ R. Vol. 28, p. 6896, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments12, p. 35, n.124.

⁵ R. Vol. 28, p. 6898, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments12, p. 37, n.137 & 138.

⁶ LDEQ Second Unopposed Motion to Supplement the Administrative Record, Oct. 29, 2020, Ex. A, No. 3 (Public Comments: by . . . “multiple environmental groups, dated 8/12/2019”), EDMS 11817937, Sierra Club Comments, Darryl Malek-Wiley, Senior Organizing Representative, Environmental Justice and Community Partnerships (Aug. 12, 2019), pdf. 117.

⁷ R. Vols. 1-20, pp. 0009-4995.

⁸ LDEQ chose to issue a separate Title V permit for each of the 14 plants at the Chemical Complex, though it is considered one project.

⁹ R. Vols. 20-24, pp. 4996-5942, EDMS 11685944, 11687335, 11687231, 11687336, 11687337, 11687394, 11687491, 11687504, Public Notice Materials.

along with the Environmental Assessment Statement (“EAS”), where community residents and organizations packed the St. James West Bank Reception Hall to oppose the issuance of the permits.¹⁰ Following Formosa’s presentation¹¹ and statements by Parish officials,¹² LDEQ invited people living within two miles of the proposed site to speak,¹³ each of whom opposed the project, primarily voicing concerns about health impacts associated with living near industrial plants. Following are just a few excerpts from area residents’ statements:¹⁴

- *We are already surrounded by 12 chemical plants in this area, and we know that our health issues are caused by these plants.*
- *14 new plants in this community . . . means more chemicals in our air, water and soil.*
- *More chemicals means more cancer, more damaged nervous system, more unexplained illnesses, more birth defects, more asthma, and sick children and death.*
- *What would you do if [these] plants was going to be built a mile from your [] house or your child’s school as it is being built a mile from St. Louis Academy.*
- *[W]hat is going to happen to our great grandkids? Are they going to be able to breathe the air or drink the water or utilize the land to grow crops?*
- *I have lived in the 4th District all my life. We don’t need any more chemical plants especially in District 4 and 5. We have too many already.*
- *The cancer rate is very high. People are dying like flies from cancer.*
- *The plants . . . place themselves in the poor [B]lack communities where people cannot just move out and they do not offer nothing to the person but illness.*
- *Our bodies can no longer take any more, breathing the toxic and chemicals every day.*
- *Residents living near the plants are sick. They are suffering and dying from cancer. My sister was one of them. They have respiratory problems.*
- *Speaking as a 28 year teacher, I can speak for the children as well. What about them? Jesus said what about the leas[t] of them?*
- *Before all these places came around, we were a thriving community. We had fruit trees, we had everything. The grass was so green. We don’t have nothing anymore. We don’t even have the birds that fly around us like we used to.*
- *They don’t care about the residents, don’t care about the Black residents. They bought the white out and left us standing right here.*
- *[O]ne of our schools has been bought by a plant, and as time is going on we have this plant, [Formosa], coming in and that is going to be built right by another school.*
- *[A]s a leader and as a pastor, y’all need to look at DEQ and make them do their job because DEQ is not doing their job.*

¹⁰ R. Vols. 24-27, pp. 5949-6670, EDMS 11766810, Hearing Package.

¹¹ R. Vol. 24, pp. 5949-6670, EDMS 11766810, Hearing Tr. pp. 8-17, pdf 62-71.

¹² R. Vol. 24, pp. 6019-6021, EDMS 11766810, Hearing Tr. pp. 17-19, pdf 71-73.

¹³ R. Vol. 24, p. 6009, EDMS 11766810, Hearing Tr. p. 7, pdf 17.

¹⁴ R. Vols. 24-25, pp. 6021-6030; 6032-6038, EDMS 11766810, Hearing Tr. pp. 19-28, pdf 73-82; pp. 30-36, pdf 84-90.

• *I believe it is time that you all listen to the people are saying and not what the plant is saying.*

Parish residents living outside the two-mile area, along with other Louisiana residents and representatives from community and environmental groups, also spoke in opposition of the permits.¹⁵ Their comments again focused on the harmful health and environmental impacts Formosa Plastics would cause, often pointing to the disproportionate burden of those effects on Black residents.

LDEQ extended the written public comment period until August 12, 2019.¹⁶ The agency received *over 10,000 comments* from individuals and organizations opposing the issuance of the permits.¹⁷ Petitioners submitted comprehensive comments that included written reports from engineers with decades of experience in air permitting that highlight extensive flaws in the permits.¹⁸ Petitioners supplemented their comments on August 28, 2019¹⁹ November 26, 2019.²⁰

On January 6, 2020, LDEQ issued the final Decision granting the PSD and Title V permits with minimal changes from the proposed permits.²¹ LDEQ notified Petitioners of its final Decision on January 15, 2020, and Petitioners filed this petition for judicial review within 30 days of that notice consistent La. R.S. §§ 30:2050.21(A), 2050.23(D).²²

FACTS

I. The site for Formosa’s planned chemical complex is in an area with a high minority population that is already inundated with industrial pollution.

By granting the air permits, LDEQ has authorized Formosa Plastics to build the 14-plant Chemical Complex on a 2,400-acre site in District 5 of St. James Parish, where the population is 90 percent Black.²³ Formosa’s proposed site, at roughly 3.75 square miles, is larger than most Louisiana towns. The satellite image in Exhibit A shows the location of Formosa Plastics’ vast

¹⁵ R. Vol. 25, pp. 6057-6127, EDMS 11766810, Hearing Tr. pp. 55-125, pdf 109-179.

¹⁶ R. Vol. 24, pp. 5943-5948, EDMS 11697060, Public Notice (June 10, 2019).

¹⁷ See EDMS 11817925, 11817933, 11817935, 11817937, 11817939, 11841221, 11852826, 11960006, 11999528, 11980800, 11948230, 11898435, 11879926, 11875748, 11825460, 11819615, 11819380, 11817931, 11819618, 11819674, 11817929, 11819619, 11819381, 11819673, 11776084, 11504322, 11701336, and Stipulation, Attach. A.

¹⁸ R. Vol. 28, pp. 6862-6944, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments.

¹⁹ EDMS 11841221, Petitioners’ Aug. 28, 2019 Comments. See LDEQ’s Second Unopposed Motion to Supplement the Administrative Record (Oct. 29, 2020). Through this unopposed motion, LDEQ supplemented the administrative record with Petitioners’ Aug. 28, 2019 comments.

²⁰ R. Vol. 30, pp. 7433-7443, EDMS 11960006, Petitioners’ Nov. 26, 2019 Supp. Comments.

²¹ R. Vol. 31, 7569-8436, EDMS, 11998422.

²² R. Vols. 34-35, pp. 8437-8618, EDMS 11998452, LDEQ Basis for Decision and Response to Comments.

²³ R. Vol. 28, p. 6931; p. 6951, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, p. 69; Attach. A, Kray Aff., Ex. 2, p. 2 (citing US Census Bureau, American Community Survey 2017).

site on the west bank of the Mississippi River in the center of Cancer Alley. The U.S. Census map (also in Exhibit A) depicts the same area and shows that Formosa Plastics' site is immediately upriver of District 5's residential communities of Welcome (pink) and St. James (yellow).²⁴ Formosa Plastics plans to develop much of its vast site, leaving only about a 300 foot "buffer" between its operations and its site perimeter or "fenceline," as shown in Exhibit B.

According to the U.S. Census Bureau, which combines Welcome and St. James into one census tract, the communities have a population of over 2,000 residents, 87.1 percent of whom identify as "Black or African American."²⁵ EPA's environmental justice screening and mapping tool,²⁶ which uses demographic information from the U.S. Census block group, underscores this information.²⁷ EJScreen data show that of the 1,064 residents of Welcome, 93 percent are minority.²⁸ In addition, directly across the river, the community of Union (light orange in U.S. Census map, Exhibit A)—only one half mile from the Formosa Plastics site—has a 64 percent minority population.²⁹ For perspective, St. James Parish has a minority population of 52 percent, and Louisiana's minority population is 41 percent.³⁰ Further, the Fifth Ward Elementary School (now referred to as St. Louis Academy), with an enrollment capacity of 480, serves a student population that is 99 percent black.³¹ This school is just one mile from Formosa's site, dubbed by the company as the "Sunshine Project" Exhibit I.³²

²⁴ The two communities are often referred to collectively as St. James.

²⁵ R. Vol. 29, p. 7131, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, Attach. L. (2010 Census Tract Reference Map, Attach. M (2010 Demographic Profile Data (providing demographic data for Tract 405))).

²⁶ EJSCREEN is EPA's environmental justice screening and mapping tool that provides EPA with a nationally consistent dataset and approach for combining environmental and demographic indicators. *See* <https://www.epa.gov/ejscreen>.

²⁷ R. Vol. 28, p. 6930, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, p. 68 (discussing 2010 Census Block Group for St. James Parish and citing https://www2.census.gov/geo/maps/dc10map/GUBlock/st22_la/county/c22093_st_james/DC10BLK_C22093_000.pdf).

²⁸ R. Vol. 29, pp. 7116-7130, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, Attach. K (EPA EJScreen Summary Reports) (showing that Welcome, Salsburg, Central, White Hall, and Union, all towns within three miles of the proposed facility, are 93%, 78%, 65%, 64% and 64% minority, respectively).

²⁹ *Id.*

³⁰ *Id.*

³¹ R. Vol. 28, p. 6917, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, p. 54-55, n. 220 (discussing the Fifth Ward Elementary School's (now St. Louis Academy) enrollment capacity of 480 and citing St. James Parish School Board, Comprehensive Annual Financial Report, Year Ended June 30, 2017, p. 94, pdf. 115, [https://app.lla.state.la.us/PublicReports.nsf/BEA52CCC6288664D86258210007BCC87/\\$FILE/00017138.pdf](https://app.lla.state.la.us/PublicReports.nsf/BEA52CCC6288664D86258210007BCC87/$FILE/00017138.pdf).115, . *See also U.S. v. St. James Parish School Board*, 2:65-cv-16173, Consent Order, p. 13 (E.D. La. Jan. 20, 2017) (showing enrollment at the Fifth Ward Elementary School is 99% black), <https://www.justice.gov/opa/press-release/file/933961/download>).

³² R. Vol. 28, p. 6968, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, p. 106 Attach. B; R. Vol. 14, p. 3505, EDMS 11230529, Formosa Plastics' EAS, July 19, 2018, Ex. D, pdf. 78.

Nonetheless, in its application materials, Formosa Plastics completely sidesteps the racial makeup of the area, telling LDEQ misleadingly that the “neighborhood” closest to the site “is 90% white.”³³ The tiny census block that Formosa Plastics references is not a neighborhood at all as it only has a total population of two people.³⁴ Though Formosa Plastics could have considered building its plant in many places, it asserted that “it simply would not be possible to place the site along the river without an African-American community being present somewhere in the general vicinity.”³⁵

The area immediately surrounding the proposed plant is home to dozens of major sources of industrial pollution.³⁶ The map in Exhibit C shows the new (magenta) and existing (lavender) industrial facility sites that are within and between the African American communities (yellow) in St. James. Indeed, four of the top five existing toxic chemical releasers in St. James Parish are within four miles of the Formosa Plastics’ site, and nearby Donaldsonville is among the 50 most toxin-producing cities in the U.S.³⁷ LDEQ recently issued air permits for the construction of two major methanol plants in the community of St. James (YCI Methanol and South Louisiana Methanol, both which are racing to build the largest methanol plants in North America), as well as a permit that allows Nucor (an iron manufacturing facility) across the river to expand.³⁸

II. The permits allow Formosa Plastics to build what would be the largest chemical complex in the United States with enormous amounts of harmful air pollution.

LDEQ issued Formosa Plastics a PSD permit that allows for the construction of the entire planned Chemical Complex.³⁹ LDEQ also issued 14 separate Title V (or Part 70) permits that cover the operation of each of the 14 major facilities⁴⁰ that comprise the complex.⁴¹ Ten of these

³³ R. Vol. 19, p. 4757, EDMS 11457119, Formosa’s Supplemental EAS, p. 26, n.23, Figure E, pdf. 27 (citing to www.Justicemap.org, and referring to the tiny census area (block 2098) shaded in magenta).

³⁴ *Id.* (clicking on tiny census area (block 2098) shaded in magenta on www.Justicemap.org shows population of two).

³⁵ R. Vol. 19, p. 4757, EDMS 11457119, Formosa’s EAS, Jan. 7, 2019, p. 26, pdf. 27.

³⁶ R. Vol. 28, p. 6932, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, p. 70.

³⁷ R. Vol. 29, p. 7131, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, Attach. N, 2017 TRI Factsheet for St. James Parish; see <https://blog.odetoclean.com/the-united-states-of-toxins-1e219e5a701f>.

³⁸ R. Vol. 28, p. 6867, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, p. 6.

³⁹ R. Vol. 34, pp. 8311-8436, EDMS 11998450, LDEQ Prevention of Significant Deterioration (PSD) Permit.

⁴⁰ Each of the 14 facilities alone is considered a major source of pollution under state air regulations. See LAC 33:III.502.A.

⁴¹ R. Vols. 31-33, pp. 7569-8273,], EDMS 11998422, 11998424, 11998426, 11998428, 11998430, 11998432, 11998438, 11998440, 11998442, 11998444, 11998446, 11998448, 11998434, 11998436, LDEQ Final Permit Part 70 Approvals.

facilities are chemical plants that would manufacture ethylene and propylene to produce polyethylene, propylene, and ethylene glycol primarily to produce plastics.⁴² The other four facilities, including electric- and steam-generating units, would support these operations.⁴³

The permits limit the amount of air pollutants that Formosa Plastics can emit from hundreds of sources at these plants. *See* Exhibit D (Formosa’s air modeling plot plan showing emission sources throughout the site). For example, the Title V permit for the Ethylene Plant 1 (also known as an “ethylene cracker”) covers 40 separate sources of air pollutants for that plant.⁴⁴ These so-called emission sources include, for example, a flare, which is a tall chimney or “stack” with an open flame that plants use to burn off dangerous gases, often released by valves when the pressure is too great. Other emission sources include enclosed furnaces called vapor combustion units or thermal oxidizers that also burn gases and release emissions through shorter stacks. In addition, sources like pipes, connectors, tanks, and various other vessels predictably leak emissions through what are referred to as “fugitive sources.”

The permits include both pound-per-hour and tons-per-year limits on the pollutants Formosa Plastics can emit into the air from the various emission sources.⁴⁵ The tables in Exhibit E show the total emissions that all of the permits authorize Formosa Plastics to emit from the entire complex in tons per year (tpy). Table 1 shows the “criteria pollutants,” pollutants for which ambient air quality standards have been set. Table 1 also includes volatile organic compounds (VOCs), which are a precursor for the criteria pollutant ozone, also known as ground-level smog. This table also includes greenhouse gas emissions (e.g., carbon dioxide). To put these numbers in perspective, a facility that has the potential to emit more than 100 tpy of any of the criteria pollutants, is considered a major source of air pollution.⁴⁶ Formosa Plastics’ criteria pollutants make the facility a major source 60 times over. And the greenhouse gas emissions are equivalent to emissions from 3.5 coal-fired power plants.⁴⁷ Table 2 in Exhibit E

⁴² R. Vols. 31-33, pp. 7616-7845, 7867-8216, EDMS 11998424, 11998426, 11998428, 11998430, 11998438, 11998440, 11998442, 11998444, 11998446, 11998448, LDEQ Final Permit Part 70 Approvals for chemical plants that would manufacture ethylene and propylene.

⁴³ R. Vols. 31-33, pp. 7569-7615, 7846-7866, 8217-8310, EDMS 11998422, 11998432, 11998436, 11998434, LDEQ Final Permit Part 70 Approvals for utility plants.

⁴⁴ R. Vol. 33, pp. 8150-8216, EDMS 11998448, LDEQ Final Permit Part 70 Approval, Ethylene Plant 1.

⁴⁵ R. Vol. 33, pp. 8182-8189, EDMS 11998448, LDEQ Final Permit Part 70 Approval, Ethylene Plant 1, pdf. 33-40.

⁴⁶ LAC 33:III.502 (defining major source).

⁴⁷ R. Vol. 28, p. 6920, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, p. 58.

shows Formosa Plastics' toxic air pollutants, which are pollutants listed in LAC 33:III.5112, Tables 51.1 and 51.3. These pollutants are known or suspected to cause cancer or other serious health effects, such as reproductive effects, or to cause adverse environmental effects.⁴⁸ Any facility that emits more than 10 tpy of any one of these pollutants, or more than 25 tpy aggregated, is considered a major source of toxic air pollutants.⁴⁹ Again, the Chemical Complex exceeds these thresholds for six different toxic air pollutants, in all totaling over 800 tons of pollution per year.

LEGAL FRAMEWORK

This petition for judicial review involves two programs under the federal Clean Air Act: (1) Title I Prevention of Significant Deterioration ("PSD") of Air Quality and (2) Title V Operating Permits. The U.S. Environmental Protection Agency ("EPA") granted LDEQ authority to run these programs in Louisiana, and LDEQ codified the Clean Air Act rules in state regulations. Hence, whether LDEQ follows the mandates of the Clean Air Act is a matter of both federal and state law.

This judicial review proceeding also centers on LDEQ's public trustee duty under the Louisiana Constitution and statutory provisions. Louisiana Supreme Court and First Circuit case law has established that under the Constitution's public trust doctrine, state agencies must assess the environmental effects of proposed permits, avoid environmental harm to the maximum extent possible, and act to mitigate unavoidable harm. Under the public trust doctrine, the Supreme Court recognizes that environmental regulations alone may not provide the protection the Constitution requires to safeguard the environment and public interest.⁵⁰

I. The Clean Air Act

A. National Ambient Air Quality Standards

The Clean Air Act establishes a rigorous program for regulating new and existing sources of air pollution through a state and federal partnership. *See* 42 U.S.C. § 7410; *Virginia v. Browner*, 80 F.3d 869, 883 (4th Cir. 1996) ("The [Clean Air Act] 'establishes a program of

⁴⁸ Except for ammonia, hydrogen sulfide, and sulfuric acid, these pollutants are also classified as VOC and are included in the VOC total in Exhibit E, Table 2.

⁴⁹ LAC 33:III.502 (defining major source).

⁵⁰ *Save Ourselves v. La. Env'tl. Control Comm'n*, 452 So. 2d 1152, 1160 (La. 1984) ("[I]t appears that the agency may have erred by assuming that its duty was to adhere only to its own regulations rather than to the constitutional and statutory mandates.").

cooperative federalism that allows the [s]tates, within limits established by federal minimum standards, to enact and administer their own regulatory programs, structured to meet their own particular needs.”) (quoting *Hodel v. Va. Surface Mining & Reclamation Ass’n, Inc.*, 452 U.S. 264, 269 (1981)). At the heart of this program are the National Ambient Air Quality Standards (“NAAQS”) that EPA establishes for certain ubiquitous pollutants that are harmful to human health, referred to as “criteria pollutants”. 42 U.S.C. § 7409. The NAAQS are health-based standards that limit the concentration of each such pollutant allowable in the “ambient air,” which is the air people breathe. *Id.* § 7409(b). The Clean Air Act directs EPA to set the national standards for various pollutants at a level “requisite to protect the public health,” by “an adequate margin of safety.” *Id.* § 7409(b)(1); *Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457, 475-76 (2001) (acknowledging that these national standards are to be set at levels “not lower or higher than is necessary—to protect the public health with an adequate margin of safety”).

EPA has promulgated NAAQS for six types of air pollutants: carbon monoxide, lead, nitrogen dioxide, ozone (smog), particulate matter (PM₁₀ / PM_{2.5}), and sulfur dioxide. *See* 40 C.F.R. pt. 50. At issue in this proceeding are NAAQS for fine particulate matter, referred to as PM_{2.5}, which are inhalable particles that are generally 2.5 micrometers in diameter and smaller. These fine particles and droplets, sometimes described as soot, are small enough to be inhaled deep into the lungs and get into the bloodstream.⁵¹ Breathing too much of these fine particles can inflame airways and lead to serious health effects such as heart attacks, aggravated asthma, decreased lung function, and premature death.⁵² A recent study found links between chronic PM_{2.5} exposure and nearly 200,000 deaths.⁵³

Also at issue in this proceeding is the NAAQS for nitrogen dioxide (“NO₂”), which is

⁵¹ R. Vol. 30, p. 7442, EDMS 11960006, Petitioners’ Nov. 26, 2019 Supp. Comments, p. 10 (citing Benjamin Bowe, et al., *Burden of Cause-Specific Mortality Associated With PM_{2.5} Air Pollution in the United States*, JAMA Network Open, (Nov. 20, 2019), [https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2755672?utm_source=For The Media&utm_medium=referral&utm_campaign=ftm_links&utm_term=112019](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2755672?utm_source=For%20The%20Media&utm_medium=referral&utm_campaign=ftm_links&utm_term=112019)).

⁵² R. Vol. 30, p. 7442, EDMS 11960006, Petitioners’ Nov. 26, 2019 Supp. Comments, p. 10 (citing *See Integrated Science Assessment for Particulate Matter* (External Review Draft), U.S. E.P.A., <https://www.epa.gov/isa/integrated-science-assessment-isa-particulate-matter>).

⁵³ R. Vol. 30, p. 7442, EDMS 11960006, Petitioners’ Nov. 26, 2019 Supp. Comments, p. 10 (citing Benjamin Bowe, et al., *Burden of Cause-Specific Mortality Associated With PM_{2.5} Air Pollution in the United States*, JAMA Network Open, (Nov. 20, 2019), [https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2755672?utm_source=For The Media&utm_medium=referral&utm_campaign=ftm_links&utm_term=112019](https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2755672?utm_source=For%20The%20Media&utm_medium=referral&utm_campaign=ftm_links&utm_term=112019)).

part of a group of highly reactive gases known as nitrogen oxides (“NO_x”). Breathing air with high concentrations of NO₂ can cause or worsen respiratory diseases such as asthma, particularly among children and the elderly.⁵⁴ Nitrogen oxides are also a precursor for ground-level ozone or smog. Smog is created when nitrogen oxides and volatile organic compounds (“VOCs”) such as industrial air pollution that contains benzene, formaldehyde, and ethylene oxide react in the presence of sunlight.

EPA works with states to designate areas throughout the country as either meeting the NAAQS for a particular pollutant or not. An area that meets a NAAQS is classified as an “attainment area” for that standard, and an area that does not meet a standard is classified as a “nonattainment area” for that standard. 42 U.S.C. § 7407(d)(1)(A)(i)-(ii). Alternatively, EPA may designate an area as “unclassifiable,” which the Clean Air Act defines as an area that “cannot be classified on the basis of available information as meeting or not meeting” the national standard. 42 U.S.C. § 7407(d)(1)(A)(iii). The EPA treats an “unclassifiable” area as if it were in attainment. *See* 42 U.S.C. § 7471. EPA has classified St. James Parish as “unclassifiable/attainment” for several standards, including PM_{2.5} and NO₂.⁵⁵ This is because there are only two air quality monitors for the entire Parish: an ozone monitor in Convent and a sulfur dioxide monitor in Gramercy.⁵⁶ Regardless of designation status, when a large source of pollution like Formosa Plastics seeks to build, it must do comprehensive modeling that includes an inventory of area emissions. Formosa’s modeling reveals violations of the NAAQS, something LDEQ has been aware of for much of the last decade,⁵⁷ but continues to let industry build and pollute St. James Parish and does so without re-visiting the area designation.⁵⁸

The key difference between an attainment area and non-attainment area is that facilities

⁵⁴ *Id.*

⁵⁵ 40 C.F.R. § 81.319.

⁵⁶ Current Monitoring Data & AQI in the New Orleans Area, LDEQ, <https://airquality.deq.louisiana.gov/Current/Region/NewOrleansArea>.

⁵⁷ R. Vol. 30, p. 7443, EDMS 11960006, Petitioners’ Nov. 26, 2019 Supp. Comments, p. 10 (citing Letter from Jeffrey Robinson Chief, Air Permits Section U.S. Env’tl. Protec. Agency, Region 6 to Tegan Treadaway, Louisiana Dep’t of Env’tl. Quality, p. 8, (Jan. 7, 2011), <https://deq.louisiana.gov/app/doc/view.aspx?doc=7830225&ob=yes&child=yes> (raising concern that air permit applicant’s modeling for St. James facility that “predicts order of magnitude exceedances of the 1-hour NAAQS even without [applicants’ emissions]” and noting that “LDEQ will likely need to conduct additional modeling in [St. James] in investigating and resolving previously modeled violations of ambient standards (i.e. PM10, PM2.5, and 3-hour and 24-hour SO2 standards) around nearby facilities based on [applicant’s]”).

⁵⁸ R. Vol. 28, pp. 6873-6875, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, pp. 12-14 (explaining that LDEQ impermissibly relies on Significant Impact Levels to excuse incremental violations of NAAQS in preconstruction permits, despite unambiguous language in the Clean Air Act barring this practice).

applying for permits in non-attainment areas must comply with more stringent pollution control technology standards, which may limit production, and the facility must “offset” its emissions by procuring reductions at other area facilities. *See* 42 U.S.C. §§ 7475(a)(4), 7479(3), 7503 (2006).

B. PSD Requirements

Areas designated as in attainment (or unclassifiable) for the NAAQS (like St. James Parish) are subject to the Clean Air Act’s PSD program. *See* 42 U.S.C. §§ 7470-7479 (the “PSD provisions”). As the name implies, the PSD program is aimed at preventing areas that meet the NAAQS from developing unhealthy air by managing industrial growth. The PSD program does this by not only establishing national standards (i.e., the NAAQS limits the concentration of the pollutant in the ambient air), but also by requiring EPA to limit how much this concentration can increase in any given area so that industrial development does not result in an area being polluted right up to the limit. That is, EPA sets what is known as a “PSD increment,” which is the “maximum allowable increase” for a particular pollutant over a baseline concentration established for that area. 42 U.S.C. § 7473(b)(2); *see also* 40 C.F.R. § 52.21(c) (setting PSD increments).⁵⁹ Increments act as localized ceilings that cannot be exceeded. They are necessarily lower than the national standard for a given pollutant, and they act like an early warning system of approaching NAAQS violations. The PSD “increment” for PM_{2.5} is at issue in this case.

To maintain compliance with the national standards and ensure that a project will not cause or contribute to exceedances in air pollution standards that harm human health and the environment, the Clean Air Act’s PSD program establishes a mandatory review and permitting process before any construction may begin. *See* 42 U.S.C. § 7475; *Alaska Dep’t of Env’t Conservation v. EPA*, 540 U.S. 461, 470 (2004); *Ala. Power Co. v. Costle*, 636 F.2d 323, 362 (D.C. Cir. 1979) (Identifying the PSD permitting process as the principle mechanism for monitoring consumption of allowable increments.).

Congress designed the Clean Air Act so that states can administer their own PSD programs through a “state implementation plan” or “SIP,” which EPA must approve. 42 U.S.C. § 7410(a)(1)-(2). Louisiana has an EPA-approved SIP PSD program. 40 C.F.R. § 52.970(c)

⁵⁹ The PSD increment is a single number that the EPA fixes for each pollutant, and it applies to all regions that have been designated as “attainment” or “unclassifiable” with respect to that pollutant. *See* 40 C.F.R. § 52.21(c). As new emissions sources are added to an area, they steadily “consume” the increment. *Clean Water Action Council of Ne. Wisc., Inc. v. EPA*, 765 F.3d 749, 750 (7th Cir. 2014).

(identifying EPA approved regulations in the Louisiana SIP). Once “EPA approves a SIP, it becomes federal law.” *Env’t Tex. Citizen Lobby, Inc. v. ExxonMobil Corp.*, 968 F.3d 357, 373 (5th Cir. 2020). The regulations that comprise Louisiana’s SIP are codified under LAC 33:III.509 (PSD regulations); *see also* 40 C.F.R. § 52.970(c) (listing Louisiana’s SIP regulations). Louisiana’s PSD requirements, therefore, are enforceable as state and federal law.

Louisiana PSD regulations require an applicant for a new “major stationary source” (such as the Chemical Complex)⁶⁰ to obtain a “PSD permit” *before* it can begin construction. *See* LAC 33:III.509.A.1. To obtain a PSD permit, the applicant must “demonstrate” that its emissions “would not cause or contribute to air pollution in violation of: a. any national ambient air quality standard in any air quality control region; or b. any applicable maximum allowable increase over the baseline concentration [i.e., the increment] in any area.” LAC 33:III.509.K.1; 42 U.S.C. § 7475(a)(3). In other words, in order to obtain a PSD permit, large new sources of pollution must affirmatively show that when they are up and running, their pollution would not cause or contribute to a violation of any NAAQS or exceedance of any increment. The way an applicant “demonstrate[s]” compliance with the NAAQS and increments is with standardized computer modeling called the “Air Quality Analysis.” LAC 33:III.509.L, M. The Air Quality analysis follows federal regulations on air modeling. LAC 33:III.509.L.1. (“All estimates of ambient concentrations required [under PSD review] shall be based on applicable air quality models, databases, and other requirements specified in Appendix W of 40 CFR Part 51 (Guideline on Air Quality Models).”). The Air Quality Analysis must account for both the proposed source’s potential new emissions, as well as emissions from other relevant pollution sources in the same area that also could degrade air quality, such as petrochemical plants nearby. *See* 40 C.F.R. Part 51, App. W §§ 8.1, 8.3, 9.2. If an applicant fails to demonstrate that it will not cause or contribute to a NAAQS or increment violation, the permitting authority must not issue a PSD permit. Without a PSD permit a facility cannot construct.

As detailed below, Formosa Plastics is unable to demonstrate through its Air Quality

⁶⁰ A major stationary source is a facility with the potential to emit at least 100 tons per year of any PSD-regulated air pollutant in certain source categories such as a chemical processing plant. LAC 33:III.509.B; 42 U.S.C. § 7479(1). Each of the 14 plants that Formosa Plastics seeks to build has the potential to emit far more than 100 tons per year of PSD-regulated pollutants. And, taken together, the permits that LDEQ issued to Formosa allow all 14 plants to emit *over 6,000 tons per year* of PSD-regulated pollutants (not including the greenhouse gas pollutants). Together the plants are considered one facility for PSD purposes and so there is one PSD permit for the entire complex.

Analysis that the emissions from its planned Chemical Complex will not cause or contribute to a violation of the NAAQS or that the pollution from its planned facility will not cause or contribute to an exceedance of a PSD increment.

C. Title V Permit Requirements

Major sources of air pollution like the planned Chemical Complex must obtain a permit that meets Clean Air Act Title V requirements (i.e., a “Title V permit”), in addition to a PSD permit. *See* 42 U.S.C §§ 7661a, 7661c. While a PSD permit focuses on meeting the Clean Air Act requirements to start construction of a major emissions source, a Title V permit governs all of the specifics of how the source is allowed to operate once it is built and operating. The purpose of the Title V permit is to facilitate compliance and enforcement by “enabl[ing] the source, States, EPA, and the public to understand better the requirements to which the source is subject, and whether the source is meeting those requirements.” EPA Operating Permit Program, Final Rule, 57 Fed. Reg. 32,250, 32,251 (July 21, 1992). In preparing a Title V permit, LDEQ must put into place conditions such as testing, monitoring, reporting, and recordkeeping that are sufficient to “assure compliance” with all applicable Clean Air Act requirements, including emission limits set in PSD permits. 42 U.S.C. § 7661c(a), (c); 40 C.F.R. §§ 70.6(a)(1), (c)(1); LAC 33:III.507.H; *see also* 40 C.F.R. § 70.2 (defining “applicable requirements”).

Similar to the Clean Air Act’s PSD provisions, the Act also requires each state to develop and submit to EPA a program for operating permits intended to meet the requirements of Title V of the Act. 42 U.S.C. § 7661a(d)(1). Louisiana’s approved program is codified in LAC 33:III.507. *See* 60 Fed. Reg. 47,296 (September 12, 1995) (approving Louisiana’s Title V permits program).

D. Louisiana’s Toxic Pollutant Regulations

Major sources like the Chemical Complex also are subject to Louisiana’s air toxics program. LAC 33:III.5101.A. Major sources must comply with Louisiana’s “ambient air standards,” that set maximum air concentrations of toxic air pollutants that apply “over publicly accessible property” and beyond the plant’s fence line. LAC 33:III.5105.A.2, 5109.B; LDEQ, Air Quality Modeling Procedures at p. 3-1 (Aug. 2006).⁶¹ New sources, like those at the Chemical

⁶¹ LDEQ *Air Quality Modeling Procedures*, (Aug. 2006), <https://deq.louisiana.gov/assets/docs/Air/ModelingProcedures0806.pdf>.

Complex, are required to submit “a dispersion modeling report demonstrating compliance with the ambient air standard.” LAC 33:III.5111.B.4; *see* LDEQ, Air Quality Modeling Procedures, Section 3 (Aug. 2006).

Louisiana regulations require LDEQ to “at least every 36 months, review and update the ambient air standards listed for each toxic air pollutant in LAC 33:III.5112, Table 51.2.” LAC 33:III.5109.B.6. LDEQ established ambient air quality standards for the bulk of the toxic air pollutants it regulates over 12 years ago. *See* LR 33:2624 (Dec. 2007);⁶² LAC 33:III.5712, Table 51.2 (historical note). LDEQ has never updated the standards for any of the toxic air pollutants at issue in this proceeding, which include cancer-causing chemicals such as benzene, formaldehyde, and ethylene oxide. In the case of ethylene oxide, the EPA revised its standard in 2016 after determining (utilizing the best available science) that this toxic pollutant is far more carcinogenic than previously thought. In situations like this, where state standards lag behind the best available science, LDEQ’s constitutionally-mandated public trustee duty (discussed immediately below) requires the agency to go beyond its own outdated standards and consider health effects based on updated standards.

II. Louisiana Constitution, Article IX, § 1 (the Public Trustee Duty)

Much of this case centers on Louisiana’s public trustee duty and LDEQ’s failure to meet its obligations under this mandate. The Louisiana Constitution establishes the public trust doctrine, which mandates: “The natural resources of the state, including air and water, and the healthful, scenic, historic, and esthetic quality of the environment shall be protected, conserved, and replenished insofar as possible and consistent with the health, safety, and welfare of the people.” La. Const. art. IX, § 1. In *Save Ourselves*, the seminal public trustee case, the Louisiana Supreme Court interpreted this constitutional mandate as requiring LDEQ to determine “before granting approval of any proposed action affecting the environment, [] that adverse environmental impacts have been minimized or avoided as much as possible consistently with the public welfare.” *Save Ourselves, Inc. v. La. Env’t Control Comm’n*, 452 So. 2d 1152, 1157 (La. 1984). The Supreme Court explained that while “the constitution does not establish

⁶² Louisiana Register, Vol. 33, No. 12, (Dec. 12, 2007), <https://www.doa.la.gov/osr/REG/0712/0712.pdf>.

environmental protection as an exclusive goal, [it] *requires a balancing process in which environmental costs and benefits must be given full and careful consideration along with economic, social and other factors.*” *Id.* (emphasis added). The Louisiana Environmental Quality Act underscores this duty, mandating that “as the primary public trustee of the environment, [LDEQ] shall consider and follow the will and intent of the Constitution of Louisiana and Louisiana statutory law in making any determination relative to the granting or denying of permits.” La. R.S. § 30:2014(A)(4).

The First Circuit further refined LDEQ’s public trustee duty by dictating issues that LDEQ must address in a written decision before it issues a permit as follows:

- (1) Whether the potential and real adverse environmental effects of the proposed facility have been avoided to the maximum extent possible;
- (2) Whether a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former;
- (3) Whether there are alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits;
- (4) Whether there are alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits; and
- (5) Whether there are mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits.

In re Am. Waste and Pollution Control Co., 633 So. 2d 188, 194 (La. App. 1st Cir. 1993).⁶³

Louisiana’s public trustee duty is much like—and in fact patterned after—the National Environmental Policy Act (“NEPA”), which was the first major federal environmental law, often referred to as “Magna Carta” of federal environmental laws.⁶⁴ *See Save Ourselves*, 452 So. 2d at 1157 (citing *Calvert Cliffs’ Coord. Committee v. U.S. Atomic Energy Com’n*, 449 F.2d 1109, 1119 (D.C.Cir.1971) (landmark NEPA decision). NEPA cases involving federal agency decisions are therefore often instructional.

The Louisiana Environmental Quality Act requires applicants for major facilities (such as

⁶³ In other decisions, the First Circuit has collapsed this 5-factor test into three factors, merging parts (3)–(5) without any alteration to the substance. *See, e.g., in re Oil & Gas Expl.*, 2010-1640, p.4; 70 So. 3d at 104. LDEQ sometimes refers to this inquiry as the “IT Requirements” or “IT Questions” after the name of the permittee in *Save Ourselves*.

⁶⁴ *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 193 (D.C. Cir. 1991).

Formosa Plastics) to submit an environmental assessment statement (“EAS”) that addresses the five public trustee issues outlined above. La. R.S. § 30:2018(A). LDEQ then uses the EAS to draft its own analysis. La. R.S. § 30:2018(B). The Supreme Court has made clear that LDEQ “must act with diligence, fairness and faithfulness to protect this particular public interest in the resources.” *Save Ourselves*, 452 So. 2d at 1157. The agency’s “role as the representative of the public interest does not permit it to act as an umpire passively calling balls and strikes for adversaries appearing before it; the rights of the public must receive active and affirmative protection at the hands of the commission.” *Id.* (citing *Calvert Cliffs’ Coordinating Comm. v. U.S. Atomic Energy Comm’n*, 449 F.2d 1109, 1119 (D.C. Cir. 1971)). Indeed, the public trustee duty offers a check on agency action made amidst political pressure. The Constitution requires the agency to act as trustee to the public and environment, not to serve the private, individualized interest of a permit applicant.

The public trustee requirements also act as a safety net to ensure that LDEQ applies its regulations in a way that is not detrimental to the public. The public trustee analysis requires LDEQ to consider impacts that result after applying regulatory controls and consider the cumulative effects that various potent toxic releases have on a community. But this is something LDEQ consistently fails to do. As the Supreme Court famously said in *Save Ourselves*, “it appears that the agency may have erred by assuming that its duty was to adhere only to its own regulations rather than to the constitutional and statutory mandates.” 452 So. 2d at 1160.

In addition to addressing these substantive issues, the Supreme Court has made clear that LDEQ’s written decision must be well-supported. LDEQ “is required to make basic findings supported by evidence and ultimate findings which flow rationally from the basic findings; and it must also articulate a rational connection between the facts found and the order issued.” *Save Ourselves*, 452 So. 2d at 1159. The First Circuit further detailed that to conform with this mandate, LDEQ must include: (1) a general recitation of the facts as presented by all sides; (2) a basic finding of facts as supported by the record; (3) a response to all reasonable public comments; (4) a conclusion or conclusions on all issues raised which rationally support the order issued; and (5) any and all other matters which rationally support the LDEQ’s decision. *In re Rubicon, Inc.*, 95–0108, p. 10-11 (La. App. 1st Cir. 2/14/96), 670 So. 2d 475, 483.

STANDARD OF REVIEW

The Court functions as an appellate court over the matter and the standard of review provisions of the Administrative Procedure Act (APA) apply. La. R.S. § 30:2050.21(F). The APA standard of review provisions are as follows:

The court may reverse or modify the decision if substantial rights of the appellant have been prejudiced because the administrative findings, inferences, conclusions, or decisions are:

(1) In violation of constitutional or statutory provisions; (2) In excess of the statutory authority of the agency; (3) Made upon unlawful procedure; (4) Affected by other error of law; (5) Arbitrary or capricious or characterized by abuse of discretion or clearly unwarranted exercise of discretion; or (6) Not supported and sustainable by a preponderance of evidence as determined by the reviewing court. In the application of this rule, the court shall make its own determination and conclusions of fact by a preponderance of evidence based upon its own evaluation of the record reviewed in its entirety upon judicial review.

La. R.S. § 49:964(G). The Louisiana Supreme Court explained that when reviewing an agency decision, the court should start by examining the first four grounds listed in those APA provisions, which “involve evaluations of agency actions in light of established legal standards and raise traditional legal issues.” *Save Ourselves*, 452 So. 2d at 1158-59. The final standard under the APA provision requires the district court to exercise original jurisdiction and act as a fact finder rather than an appellate court. *Carpenter*, 944 So. 2d at 615.

ARGUMENT

I. LDEQ’s Decision to issue Formosa Plastics a PSD Permit despite its contribution to air quality violations in St. James Parish violates the Clean Air Act and the Public Trustee Duty to avoid environmental harm.

A. The Court must vacate the PSD Permit, because Formosa Plastics failed to demonstrate its emissions would not cause or contribute to violations of mandatory air quality standards for soot and ozone-forming pollution.

Formosa Plastics was required to “demonstrate” that its emissions would not “cause or contribute” to violations of the NAAQS or PSD increments that protect human health and the environment.⁶⁵ *See* LAC 33:III.509.K.1; 42 U.S.C. § 7475(a)(3). Instead, Formosa Plastics’ Air

⁶⁵ As discussed above, *see supra* Legal Framework, I. A., the national ambient air quality standards (“NAAQS”) are the maximum levels of pollution EPA has determined are acceptable for public health and the environment, set for six key, “criteria” pollutants, including PM_{2.5} and NO₂. 42 U.S.C. § 7409(b)(1); *Am. Trucking Ass’ns*, 531 U.S. at 475–76. The PSD increment (or simply, the “increment”) protects against deterioration of air quality even before the NAAQS are breached, like a security checkpoint at the gate to a courthouse or military base. To “demonstrate” compliance with the NAAQS and increments, an applicant uses standardized computer modeling called the “Air Quality Analysis.” LAC 33:III.509.L., M. The Air Quality Analysis predicts the concentrations of pollution near

Quality Analysis showed that the Chemical Complex would worsen air pollution in St. James Parish beyond the NAAQS for PM_{2.5} (soot) and NO₂ (an ozone-forming pollutant) and would exceed the PM_{2.5} increment.⁶⁶ LDEQ acknowledges these air quality violations,⁶⁷ and does not dispute that unhealthy levels of both PM_{2.5} and NO₂ can cause serious lung and heart problems. *See supra* Part Argument, I. A. pp. 20-21. LDEQ nonetheless approved Formosa Plastics' PSD permit by asserting several exceptions that have no basis in law, including asserting that the Chemical Complex's contributions are not significant. But the Clean Air Act, Louisiana air regulations, and the public trustee duty, forbid LDEQ to dismiss Formosa Plastics' contributions to the NAAQS and increment violations. The court must vacate Formosa Plastics' PSD permit and remand to LDEQ to address these violations should it reapply.

The key issue for the Court is whether Formosa Plastics' Air Quality Analysis shows that the Chemical Complex would not "cause or contribute" to air pollution that violates the NAAQS or increments. *See* LAC 33:III.509.K.1. While the phrase "cause or contribute to" is not defined in Louisiana air regulations or the Clean Air Act, the D.C. Circuit has held that the phrase, as used analogously in another part of the Clean Air Act, means either to cause, or "to have a part or share in producing," pollution in excess of the NAAQS. *Bluewater Network v. EPA*, 370 F.3d 1, 13 (D.C. Cir. 2004) (relying on Merriam-Webster's and Oxford English dictionary definitions). Importantly, a contribution to an ongoing violation can be either quite small or quite large: the term "contribute," "has no inherent connotation as to the magnitude or importance of the relevant 'share' in the effect; certainly it does not incorporate any 'significance' requirement." *Id.* at 13; *see also Catawba Cnty. v. EPA*, 571 F.3d 20, 28, 38–39 (D.C. Cir. 2009) (declining to find, despite noting some ambiguity in the term, that "'contribute' necessarily connotes a significant causal relationship").

In the PSD permit, LDEQ authorizes the Chemical Complex to emit very large amounts of PM_{2.5} and NO₂ pollution.⁶⁸ The Air Quality Analysis shows that if Formosa Plastics were to

ground level, throughout the area around the proposed source. *See* 40 C.F.R. Part 51, App'x W Sections 8.1, 8.3, 9.2.

⁶⁶ *See* R. Vol. 34, pp. 8449-8450, EDMS 11998452, LDEQ Basis for Decision, pp. 13–14; R. Vol. 34, pp. 8380, EDMS 11998450, Final PSD Permit, p. 68.

⁶⁷ *See* R. Vol. 34, pp. 8439-8440, EDMS 11998452, LDEQ Basis for Decision, p. 14; R. Vol. 34, pp. 8485-8486, EDMS 11998452, LDEQ Response to Comments, pp. at 3–4.

⁶⁸ *See* R. Vol. 34, p. 8440, EDMS 11998452, LDEQ Basis for Decision, p. 4.

operate, maximum pollution concentrations in St. James Parish would be almost *50 percent higher* than the NAAQS 24-hour standard for PM_{2.5} (51.16 micrograms per cubic-meter (µg/m³) versus 35 µg/m³) and would result in overconsumption of the 24-hour PM_{2.5} increment by *more than one-third* (12.96 µg/m³ versus 9 µg/m³).⁶⁹ Stunningly, the Chemical Complex’s maximum 24-hour PM_{2.5} concentration (7.97 µg/m³), by itself, nearly equals the full 24-hour PM_{2.5} increment.⁷⁰ Maximum concentrations of NO₂ would be *more than double* the NAAQS 1-hour standard (422.53 µg/m³ versus 188 µg/m³).⁷¹ The chart below summarizes these results:

	Background Concentration (µg/m ³) ⁷²	Formosa Plastics’ Max Modeled Contribution (µg/m ³) ⁷³	Industrial Sources’ Max Modeled Concentration (µg/m ³) ⁷⁴	Total (µg/m ³)*	Standard (NAAQS/ increment) (µg/m ³)
PM _{2.5} (24-hour NAAQS)	19	5.76	32.16	51.16	35
NO ₂ (1-hour NAAQS)	28.81	63.48	393.72	422.53	188
PM _{2.5} (24-hour increment)	N/A	7.97	12.96	12.96	9

*Sum of Background Concentration plus Industrial Sources’ Max Modeled Concentration.

LDEQ admits that the Air Quality Analysis shows that Formosa Plastics makes a “contribution” to modeled violations in St. James Parish, at the predicted place and time of the violation.⁷⁵

LDEQ further indicated exactly where on the map it believed Formosa Plastics’ contribution to the NAAQS violations for PM_{2.5} and NO₂ would occur.⁷⁶ Exhibit F includes LDEQ’s Map of Formosa’s Modeled PM_{2.5} NAAQS 24-hour Violations (shown as Black Dots)⁷⁷ along with a

⁶⁹ R. Vol. 34, p. 8449, EDMS 11998452, LDEQ Basis for Decision, p. 13; R. Vol. 35, pp. 8547-8548, EDMS 11998450, Final PSD Permit pp. 68–69.

⁷⁰ See R. Vol. 13, p. 3045, EDMS 11246153, Formosa Air Quality Analysis, at p. 36.

⁷¹ R. Vol. 34, p. 8449, EDMS 11998452 LDEQ Basis for Decision, p. 13.

⁷² “Background concentration” refers to values from air quality monitors. R. Vol. 13, pp. 3016-3017, EDMS 11246153, Formosa Air Quality Analysis, at pp. 7–8.

⁷³ R. Vol. 13, p. 3043, EDMS 11246153, Formosa Air Quality Analysis, at p. 34 (NAAQS standard); *id.* at p. 36 (PSD increment).

⁷⁴ Includes Formosa Plastics’ maximum contribution, plus other industry sources’ pollution. R. Vol. 13, p. 3018, EDMS 11246153, Formosa Air Quality Analysis, at p. 9.

⁷⁵ R. Vol. 34, p. 8449, EDMS 11998452 LDEQ Basis for Decision, p. 13 n.40 (describing Formosa’s “maximum contribution” to the modeled NAAQS violations) (emphasis added); R. Vol. 34, p. 8440, EDMS 11998452, Response to Comments, p. 4 (describing Formosa’s “maximum contribution” to the increment violations) (emphasis added).

⁷⁶ R. Vol. 34, pp. 8451-8452, EDMS 11998452, LDEQ Basis for Decision, pp. 15–16.

⁷⁷ R. Vol. 34, pp 8451-8452, EDMS 11998452, LDEQ Basis for Decision, pp. 15–16.

map of communities in relation to new & existing industrial facilities in St. James Parish)⁷⁸. Together, these maps show that violations would be scattered throughout the Parish and near residential areas.⁷⁹ On this basis alone, LDEQ should have denied the PSD permit. *See* LAC 33:III.509.K.1.

In addition, as a public trustee, LDEQ was required to determine that “the potential and real adverse environmental effects of the proposed facility have been avoided to the maximum extent possible.” *In re Am. Waste*, 633 So. 2d at 194. Because the Air Quality Analysis showed, to the contrary, that approving Formosa Plastics’ PSD permit could authorize worsening violations of the health-based NAAQS in St. James Parish, LDEQ failed in this fundamental duty. *See* 42 U.S.C. § 7409(b)(1); *Am. Trucking Ass’ns*, 531 U.S. at 475–76 (acknowledging that NAAQS are to be set at levels “not lower or higher than is necessary—to protect the public health with an adequate margin of safety”). For this overlapping reason, LDEQ also should have denied the PSD permit.

B. LDEQ’s arguments to approve the PSD Permit despite the air quality violations are without basis and violate the Louisiana Air Regulations and LDEQ’s Public Trust Duty.

LDEQ impermissibly permits Formosa Plastics to contribute to NAAQS violations by suggesting that Clean Air Act requirements are too conservative and that NAAQS exceedances only count when they occur over people’s homes. LDEQ also wrongly urges that Formosa’s emissions are not significant based on an extralegal, significance test and argues that this test trumps the Clean Air Act requirements. The Court must reject both sets of counterarguments.

1. LDEQ cannot dismiss the violations by claiming they would not impact residents of St. James Parish.

LDEQ decides that the NAAQS violations do not merit attention, because it argues these exceedances would not harm St. James Parish residents. LDEQ first tries to dismiss the Air Quality Analysis as an “extremely conservative,” or “worst-case” projection, in an attempt to undercut the validity of the results.⁸⁰ This is irrelevant. LDEQ must comply with the law it administers—law that is based on uniform, national requirements. *See* LAC 33:III.509.L. If the

⁷⁸ *See* R. Vol. 28, p. 6947, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, Attach. A, Kray Aff., Ex. 1.

⁷⁹ *See id.*

⁸⁰ R. Vol. 34, p. 8450, EDMS 11998452, LDEQ Basis for Decision, p. 14.

Air Quality Analysis is conservative, it is by design. *See* 42 U.S.C. § 7409(b)(1) (requiring that NAAQS be set at level “requisite to protect public health” with “an adequate margin of safety”); *id.* § 7473(b)(4) (defining increment as being no greater than NAAQS for that pollutant); *Ala. Power*, 636 F.2d at 362.⁸¹ St. James Parish residents are entitled to the same protection of their health as any other Americans.

In addition, LDEQ claims the exceedances would magically stop at or before other industrial ownership rather than reach the doorsteps of St. James Parish residences.⁸² This argument violates the Louisiana air regulations and the public trustee duty.

The air regulations do not allow LDEQ to ignore a NAAQS or increment⁸³ violation, regardless of where it occurs offsite of the applicant’s proposed facility.⁸⁴ The Air Quality Analysis must assess “the *ambient air* quality in the area that the major stationary source or major modification would affect.” LAC 33:III.509.M (emphasis added); *see id.* 509.K, L. And the regulations define “ambient air” without exception for any off-property, outdoor site. *See* LAC 33:III.111 (defining ambient air to encompass “the outdoor air or atmosphere which

⁸¹ Furthermore, the Air Quality Analysis Formosa Plastics performed is not at all “conservative” in many respects. For example, in modeling the PSD increment, Formosa Plastics used other St. James Parish sources’ self-reported, actual emissions of PM_{2.5} whenever available, rather than use the so-called “worst case” emissions that LDEQ claims. *See* R. Vol. 34, p. 8444, EDMS 11998452, LDEQ Response to Comment No. 6, p. 8; *see* R. Vol. 14, pp. 3300-3330, EDMS 11246153, Formosa Plastics Air Quality Analysis, at App’x M. As Petitioners explained throughout their comments, moreover, Formosa Plastics pervasively underestimated its potential PM_{2.5} and NO_x emissions that it used in the Air Quality Analysis. *See, e.g.,* R. Vol. 28, pp. 6880-6885, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, pp. 19–24, as well as Affidavit of Dr. Ranajit Sahu, attached as Exhibit E thereto; LDEQ Second Unopposed Motion to Supplement the Administrative Record, Oct. 29, 2020, Ex. A, No. 3 (Public Comments: by . . . “multiple environmental groups, dated 8/12/2019”), EDMS 11817937, Environmental Integrity Project Aug. 12, 2019 Comments, pdf. 32-33 (explaining Formosa Plastics may have underestimated one source of PM_{2.5} emissions “by a third, or more than 90 tons per year.”); *id.* at Ex. A, No. 2 (Supplemental Public Comments: by Earthjustice on behalf of RISE St. James, et al., pp. 1-4, dated 8/28/2019) (adopting Environmental Integrity Project comments), EDMS 11841221, p. 2, pdf. 3. Lastly, EPA has found the Air Quality Analysis model to be relatively accurate in predicting the path of emissions. 40 CFR Part 51, App’x W, Section 4.2.2.1 (explaining that the model “has been extensively evaluated” and “has shown consistently good performance”).

⁸² R. Vol. 34, pp. 8450-8452, EDMS 11998452, LDEQ Basis for Decision, pp. 14–16 (“Because the modeled exceedances are not located on residential property, property that is generally accessible to the public, or any other location where long-term exposure to emissions could be reasonably anticipated, the health of those living in the vicinity of the FG LA Complex will not be adversely impacted.”)

⁸³ LDEQ did not even attempt to argue that the location of the violations would excuse the PM_{2.5} increment violation, nor could it for the reasons outlined in this section. *See* R. Vol. 34, pp. 8450-8452, EDMS 11998452, LDEQ Basis for Decision, pp. 14–16; *id.* Response to Comments p. 4. LDEQ has forfeited any such argument. *See Save Ourselves*, 452 So. 2d at 1160 (“Although we may uphold a decision of less than ideal clarity if the agency’s path may reasonably be discerned . . . we will not supply a finding from the evidence or a reasoned basis for the commission’s action that the commission has not found or given.”).

⁸⁴ For 40 years, EPA has rejected the argument LDEQ is now advancing and recently reaffirmed its policy not to exempt property owned by other industrial facilities from the “ambient air.” *See* R. Vol. 28, p. 6879, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, p. 18 & n.37; Andrew Wheeler, EPA, Mem. to Regional Adm’rs re: “Revised Policy Exclusions from ‘Ambient Air,’” pp. 1, 6 (Dec. 2, 2019), https://www.epa.gov/sites/production/files/2019-12/documents/ambient_air2019.pdf.

surrounds the earth.”). The Air Quality Analysis includes the outside air at any other industrial sites.

Contrary to LDEQ’s claim that “the health of those living in the vicinity of the Chemical Complex will not be adversely impacted,”⁸⁵ the Air Quality Analysis shows that sensitive populations could be vulnerable to suffering health impacts from the NAAQS violations, rendering LDEQ’s decision arbitrary and capricious and in violation of the agency’s duty as a public trustee to ensure “the rights of the public must receive active and affirmative protection,” *Save Ourselves*, 452 So. 2d at 1157, 1159. For example, the PM_{2.5} violation in Convent, on Zen Noh Grain Corporation property, is in the Union census tract, near residential streets. *See* Exhibit A. The modeled PM_{2.5} violations at the NuStar and Marathon Pipeline oil terminals would be directly adjacent to the Black community of Burton Lane, which has almost no land to act as a buffer between homes and the neighboring oil tank farms.⁸⁶ The PM_{2.5} violation near the Sunshine Bridge’s westbank on-ramp would be in near homes and businesses along Highway 70. *See* Exhibit A.

Lastly, even if the violations were somehow limited to only industrially-owned properties—and they are not—industrial workers may well spend their entire careers breathing unhealthy air at these sites. The Clean Air Act does not allow LDEQ to ignore the health and well-being of workers. *See* 42 U.S.C. § 7409(b)(1) (specifying the NAAQS protect “public health”). LDEQ’s decision to sacrifice the air in some areas of the Parish, while approving the Chemical Complex, violates the Louisiana air regulations. *See* LAC 33:III.111, 509.K.1, M. It also violates the agency’s public trustee duty to protect the health of the residents, business owners, and workers who are at risk of suffering from unhealthy air pollution and is arbitrary and capricious. *See Save Ourselves*, 452 So. 2d at 1157, 1159.

2. LDEQ cannot use an extra-legal, significance-level threshold to allow air quality violations.

Finally, LDEQ’s stance that Formosa Plastics “shall not be considered to cause or contribute” to a NAAQS violation so long as LDEQ deems that contribution as not *significant*

⁸⁵ R. Vol. 34, p. 8452, EDMS 11998452, LDEQ Basis for Decision, p. 16.

⁸⁶ *See id.*; R. Vol. 28, p. 6951, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, Attach. A, Kray Aff., Ex. 2, p. 2 (providing Census data for St. James’s Fifth District, which includes Burton Lane).

enough, regardless of the Clean Air Act and state law’s mandatory language is wrong.⁸⁷ See LAC 33:III.509.K.1; 42 U.S.C. § 7475(a)(3). Specifically, LDEQ’s assertion that Formosa Plastics’ share of the violations do not exceed a “significance level” or “significant impact level” threshold at the predicted locations of those violations (denoted here interchangeably as a “significance level” or a “SIL”) cannot be used excuse Formosa Plastics’ NAAQS and increment exceedances because the Clean Air Act, Louisiana regulations and LDEQ’s public trustee duty provide no exception.⁸⁸ See *in re Am. Waste*, 633 So. 2d at 194 (duty to avoid environmental harm to the maximum extent possible).

LDEQ’s reliance on significance levels contradicts the applicable regulations. See LAC 33:III.509; 40 C.F.R. Part 51, App. W. In the Basis of Decision, LDEQ cites a federal regulation, 40 C.F.R. § 51.165(b)(2), for support.⁸⁹ But § 51.165(b)(2) stands for the opposite, providing that a source “*will be* considered to cause or contribute to a violation of a [NAAQS] when such source . . . would, at a minimum, *exceed* the following significance levels.” *Id.* (emphasis added); see *Sierra Club v. EPA*, 705 F.3d 458, 465–66 (D.C. Cir. 2013) (interpreting § 51.165(b)(2)).⁹⁰ LDEQ relies on the significance levels from nonbinding EPA memoranda that provide suggested SILs.⁹¹ These significance levels have nothing to do with whether emissions are significant from a public health standpoint. *United States v. Ameren Mo.*, 421 F. Supp. 3d 729, 817 (E.D. Mo. 2019) (“[T]he SILs do not establish a level below which there is no risk of harm from a facility’s pollution.”).⁹² To the contrary, “EPA has emphasized *ad nauseum* that there is no known safe threshold below which incremental increases in PM_{2.5} exposure do not create incremental

⁸⁷ R. Vol. 34, p. 7131, EDMS 11998452, LDEQ Basis for Decision, p. 13 n.40.

⁸⁸ R. Vol. 34, p. 8449, EDMS 11998452, LDEQ Basis for Decision, p. 13 n.40. LDEQ asserts, FG LA’s maximum contribution to any modeled exceedance of the PM_{2.5} NAAQS will be 0.89 µg/m³, which is below the SIL of 1.2 µg/m³ (EDMS Doc ID 11457473, p. 150 of 158). FG LA’s maximum contribution to any modeled exceedance of the NO₂ NAAQS will be 6.35 µg/m³, which is below the SIL of 7.5 µg/m³ (EDMS Doc ID 11379327, p. 28 of 41). Therefore, FG LA will not “cause or contribute” to a violation of the 24-hour PM_{2.5} or 1-hour NO₂ NAAQS.

Id.

⁸⁹ R. Vol. 34, p. 8449, EDMS 11998452, LDEQ Basis for Decision, p. 13 n.40.

⁹⁰ And even if this federal regulation were contorted to mean what LDEQ hopes, it still does not help LDEQ avoid the consequences of Formosa’s violations of the NO₂ 1-hour standard or PM_{2.5} increment, because Section 51.165(b)(2) does not have a significance level for either. See 40 C.F.R. § 51.165(b)(2).

⁹¹ R. Vol. 34, pp. 8481-8482, EDMS 11998452, LDEQ Response to Comments, pp. 2–3; see *Sierra Club v. EPA*, 955 F.3d 56 (D.C. Cir. 2020) (holding that EPA SILs memoranda are non-binding).

⁹² See “Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program,” 10–13 (Apr. 17, 2018), https://www.epa.gov/sites/production/files/2018-04/documents/sils_policy_guidance_document_final_signed_4-17-18.pdf.

increases in risk to human health and welfare.” *Ameren Mo.*, 421 F. Supp. 3d at 817. The memoranda’s significance levels are instead based on the inapplicable concept of the potential variability in the pollution measured at air quality monitors from day-to-day due to factors like shifts in wind.⁹³ To better understand the incompatibility, consider an analogy to a bucket, representing the NAAQS or increment, and water, representing air pollution. The SILs in the memoranda are equivalent to a measurement of the variation in height of the water on one side of the bucket, as the water sloshes from side to side while being carried. But the SILs alone tell us nothing about whether the bucket will overflow if we add more water. In fact, if the bucket is already nearly full or overflowing, it will spill even when we add small amounts of water. Likewise, when the NAAQS or increments are under threat, even small amounts of new pollution can tip an area into noncompliance or worsen existing violations.

The significance levels are unlawful, especially as used to excuse Formosa Plastics’ contributions to NAAQS and increment violations found in the Air Quality Analysis. As explained, to “cause or contribute to,” a violation, “has no inherent connotation as to the magnitude or importance of the relevant ‘share’ in the effect; certainly it does not incorporate any ‘significance’ requirement,” *Bluewater Network*, 370 F.3d at 13.⁹⁴ The D.C. Circuit accordingly vacated a prior effort by EPA to incorporate significance levels into its Clean Air Act regulations. *Sierra Club*, 705 F.3d at 464–65 (vacating, among other regulations, one that “simply state[d] that the demonstration required . . . is deemed to have been made if a proposed source or modification’s air quality impact is below the SIL.”). The court in *Sierra Club* was particularly worried about situations like the one here, recognizing that a permit applicant with emissions concentrations below a SIL still might “cause or contribute” to a violation. *Id.* at 465.⁹⁵ What matters is not whether LDEQ views the Chemical Complex’s contributions as small or

⁹³ Guidance on Significant Impact Levels for Ozone and Fine Particles in the Prevention of Significant Deterioration Permitting Program,” 10–13 (Apr. 17, 2018), https://www.epa.gov/sites/production/files/2018-04/documents/sils_policy_guidance_document_final_signed_4-17-18.pdf. This discrepancy is heightened by the fact that the significance levels began as a tool to measure compliance with a different part of the Clean Air Act. *See id.* at 8–10.

⁹⁴ This contrasts to other parts of the Louisiana air regulations and Clean Air Act that do actually use a version of the phrase, “significantly contributes,” to test compliance. *See, e.g.*, LAC 33:III.504.K, 509.B, 531.B.2; 42 U.S.C. §§ 7506a(a), 7492(c)(1), 7426(a)(1)(B), 7547(a)(1), (4).

⁹⁵ On a subsequent challenge to EPA’s 2018 memoranda’s significance levels, the D.C. Circuit held it lacked authority to invalidate the memoranda because they were not a final agency action. *Sierra Club v. EPA*, 955 F.3d 56, 63 (D.C. Cir. 2020). Instead, adversely impacted parties must challenge significance levels in appeals of permit decisions, like this one. *See id.*

large. What matters is that the Chemical Complex is contributing to NAAQS and increment violations. *See id.* at 464–65.

Beyond being unlawful under the Clean Air Act and state law, LDEQ’s argument runs exactly opposite to the agency’s public trustee duty. The Clean Air Act mandates that the NAAQS be met with precision, because the standards are to be set “not lower or higher than is necessary—to protect public health with an adequate margin of safety,” *see Am. Trucking Ass’ns*, 531 U.S. at 476. Formosa Plastics’ additional contribution to violations of those standards could add measurable harm to human health that LDEQ overlooked. *See Ameren Mo.*, 421 F. Supp. 3d at 817. By ignoring these violations and allowing Formosa Plastics to construct anyway, LDEQ failed to discharge its duty to avoid environmental harm to the maximum extent possible. *See in re Am. Waste*, 633 So. 2d at 194.

Moreover, under LDEQ’s theory, nothing would prevent issuing permits to one major source after another that contributed less than LDEQ’s significance level, but that collectively fueled mounting NAAQS and increments violations in an area. This is like allowing children to take turns adding water to the overflowing bucket, so long as each child only adds less than a certain amount. In fact, LDEQ appears to be doing this in St. James Parish, inflicting cumulative harm to public health in clear violation of its statutory and public trustee duties. In 2011, EPA warned LDEQ that permittees’ air quality analyses showed violations of several NAAQS.⁹⁶ EPA urged LDEQ to do its job: “LDEQ has a responsibility to prevent significant deterioration of air quality and attain ambient standards including the PM10, PM2.5, S02, and 1-hour NO2 NAAQS [40 CFR 51.166(a)(1)-(3)]. How does LDEQ plan to address these issues?”⁹⁷ Unfortunately, LDEQ declined to address the problem then; LDEQ is worsening the problem further now, by overlaying the Chemical Complex’s massive emissions on a community already saturated with toxic pollutants.

LDEQ wrongly issued Formosa Plastics a PSD permit to construct, despite an Air Quality Analysis that confirmed the facility would cause or contribute to violations of the PM_{2.5} 24-hour

⁹⁶ Letter from Jeffrey Robinson Chief, Air Permits Section U.S. Env’tl. Protec. Agency, Region 6 to Tegan Treadaway, Louisiana Dep’t of Env’tl. Quality, p. 8, (Jan. 7, 2011), <https://edms.deq.louisiana.gov/app/doc/view.aspx?doc=7830225&ob=yes&child=yes>, cited in R. Vol. 30, pp. 7442-7443, EDMS 11960006, Petitioners’ Nov. 26, 2019 Supp. Comments, p. 10–11 & n.62.

⁹⁷ *Id.*

standard, NO₂ 1-hour standard, and PM_{2.5} 24-hour increment. *See* LAC 33:III.509.K.1; *Save Ourselves*, 452 So. 2d at 1157–59. The Court must vacate the PSD permit.

II. LDEQ’s failure to fully consider the impact of Formosa Plastics’ ethylene oxide emissions and require measures to minimize harmful effects renders its Decision to authorize the Chemical Plant illegal.

LDEQ has authorized Formosa Plastics to emit a staggering 15,400 pounds (or 7.7 tons) per year of ethylene oxide⁹⁸—a potent human carcinogen known to cause non-Hodgkin lymphoma, myeloma, lymphocytic leukemia, and breast cancer.⁹⁹ Government agencies have also warned that inhalation exposure to ethylene oxide can lead to spontaneous abortions.¹⁰⁰ In 2016, EPA found that ethylene oxide is 30 times more likely to cause these cancers than previously understood after a rigorous, 10-year long, peer-reviewed process conducted by the agency’s Integrated Risk Information System (“IRIS”) program.¹⁰¹ In response to this assessment, EPA established a new long-term inhalation threshold for ethylene oxide of 0.02 µg/m³; any level above this constitutes an unacceptable risk of cancer.¹⁰² The State of Illinois also responded with a law that prohibits the construction of new ethylene oxide-emitting

⁹⁸ *See* R. Vol. 31, pp. 7732-7776, EDMS 11998428, Permit No. 3142-V0, Ethylene Glycol 1 Plant; R. Vol. 33, pp. 8102-8149, EDMS 11998446, Permit No 3151-V0, Ethylene Glycol 2 Plant.

⁹⁹ R. Vol. 28, p. 6910, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, p. 49 & n.192, 194 (discussing and citing *Ethylene Oxide: History*, EPA:IRIS, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=1025#tab-3 (describing work on the 2016 IRIS value for inhalation carcinogenicity); *Notice of a Public Comment Period on the Draft IRIS Carcinogenicity Assessment for Ethylene Oxide*, 78 Fed. Reg. 44,117 (July 23, 2013); *Evaluation of the Carcinogenicity of Ethylene Oxide Docket*, Regulations Gov., <https://www.regulations.gov/docket?D=EPA-HQ-ORD-2006-0756>; *Evaluation of the Inhalation Carcinogenicity of Ethylene Oxide, Executive Summary*, EPA (Dec. 2016), https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/1025_summary.pdf; *Evaluation of the Inhalation Carcinogenicity of Ethylene Oxide*, EPA (Dec. 2016), https://cfpub.epa.gov/ncea/iris/iris_documents/documents/toxreviews/1025tr.pdf [hereinafter *EtO Carcinogenicity Evaluation*]).

¹⁰⁰ R. Vol. 28, p. 6910, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, p. 49 & n.191, Ethylene Oxide: Hazard Summary, <https://www.epa.gov/sites/production/files/2016-09/documents/ethylene-oxide.pdf>; Toxicological Profile for Ethylene Oxide, <https://www.atsdr.cdc.gov/toxprofiles/tp137.pdf>.

¹⁰¹ *Id.* Other scientists and health experts have independently confirmed EPA’s findings, including the National Toxicology Program, the International Agency for Research on Cancer, and the Occupational Safety and Health Administration. R. Vol. 28, pp. 6910-6911, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, pp. 49-50 & n.196 (discussing and citing National Toxicology Program, Report on Carcinogens, Fourteenth Addition, Ethylene Oxide (2016), <https://ntp.niehs.nih.gov/ntp/roc/content/profiles/ethyleneoxide.pdf>; International Agency for Research on Cancer, IARC Monographs 100F Ethylene Oxide (2012), <https://monographs.iarc.fr/wp-content/uploads/2018/06/mono100F-28.pdf>; Occupational Safety and Health Administration, OSHA Fact Sheet Ethylene Oxide (2002), https://www.osha.gov/OshDoc/data_General_Facts/ethylene-oxide-factsheet.pdf).

¹⁰² R. Vol. 30, pp. 7439-7440, EDMS 11960006, Petitioners’ Nov. 26, 2019 Supp. Comments, pp. 7-8 (citing and discussing EPA’s proposed Misc. Organic Chemical Manufacturing Rule that addresses risk from ethylene oxide emissions and adopting IRIS value), <https://www.epa.gov/stationary-sources-air-pollution/miscellaneous-organic-chemical-manufacturing-national-emission-0>; *see also Nat. Res. Def. Council v. E.P.A.*, 529 F.3d 1077, 1082 (D.C. Cir. 2008) (discussing EPA’s Benzene rulemaking that determined the Clean Air Act’s “‘ample margin’ was met if as many people as possible faced excess lifetime cancer risks no greater than one-in-one million, and that no person faced a risk greater than 100-in-one million (one-in-ten thousand)”) (quoting 54 Fed. Reg. at 38,044-45)).

facilities within 10 miles of a school or park. 415 Ill. Comp. Stat. 5/9.16. But while other governments are working to reduce and even prohibit ethylene oxide emissions, LDEQ avoided its public trustee duty and statutory mandate to illegally authorize what would be (if built) one of the country's largest ethylene oxide-emitting facilities.¹⁰³ Indeed, only three other sources in the U.S. reported ethylene oxide emissions that exceed the amount that LDEQ has authorized Formosa Plastics to emit just one mile from an elementary school and even closer to residential areas in Black communities.¹⁰⁴

A. LDEQ violated its public trustee duty when it authorized Formosa Plastics to emit massive amounts of ethylene oxide without adequately assessing the impact and minimizing the harmful effects of the toxic pollutant.

The Court should reverse and vacate the permits, because LDEQ relied on modeling that actually shows that ethylene-oxide emissions exceeding EPA cancer-risk thresholds would reach residential areas. LDEQ's decision to approve these alarming emissions, heedless of the modeling or measures to reduce the potential harm, was arbitrary and capricious and in violation of its public trustee duty. It also violated state law requiring LDEQ to consider the consequences of its actions on local land-use plans, which here designate impacted areas as "residential."

1. LDEQ failed to recognize that ethylene oxide emissions exceed EPA's cancer risk threshold in residential areas.

Record evidence directly contradicts LDEQ's claim that "the maximum predicted concentrations of various toxic air pollutants will be well below recognized health-based thresholds."¹⁰⁵ In fact, the record indisputably shows that Formosa Plastics' emissions of ethylene oxide, a potent toxic air pollutant, will exceed the cancer risk threshold set by the federal government in communities near the site.

Figure 1, provided by Formosa and relied on by LDEQ, shows that Formosa Plastics' modeled ethylene oxide emissions exceed EPA's threshold of 0.02 $\mu\text{g}/\text{m}^3$ in all areas inside the red line.¹⁰⁶ Indeed, the modeling shows that ethylene oxide concentrations beyond the edge of

¹⁰³ R. Vol. 28, pp. 6903-6904, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, pp. 42-43 & n.162 (citing EPA's 2017 Toxic Release Inventory, *TRI On-Site and Off-Site Reported Disposed of or Other Released Top 100 Facilities for Ethylene Oxide*, IASPUB.EPA.GOV).

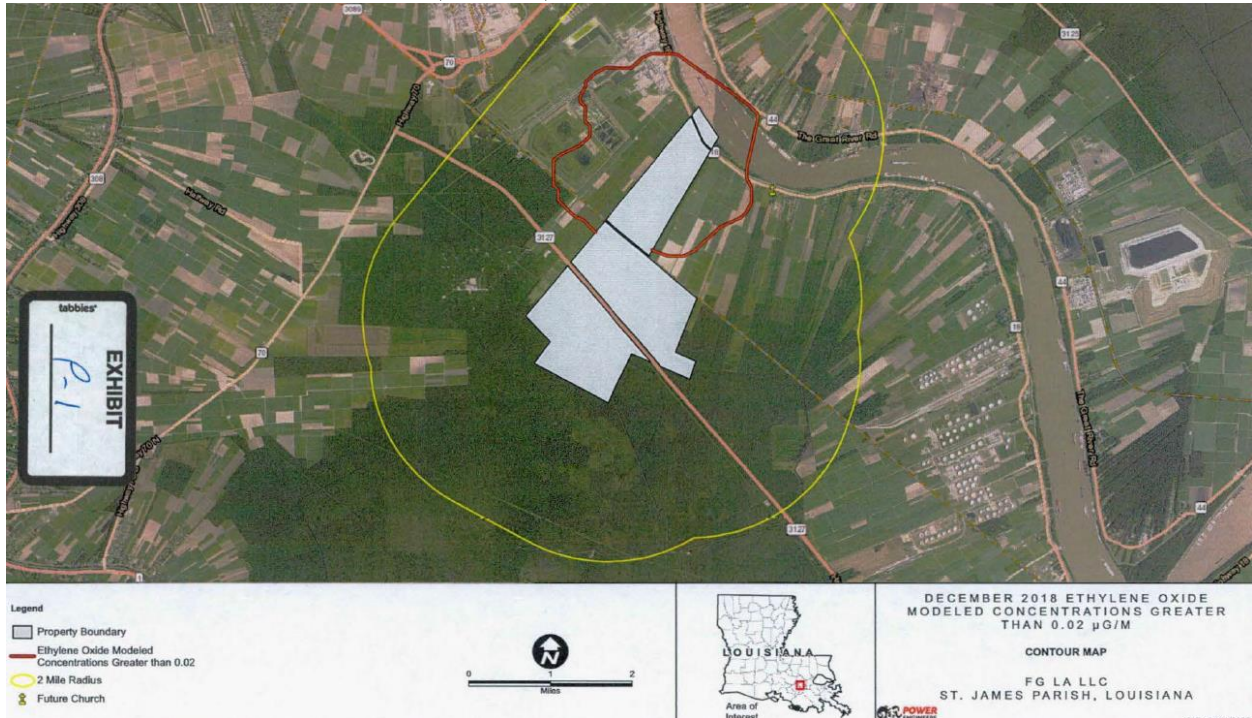
¹⁰⁴ *Id.*

¹⁰⁵ R. Vol. 35, pp. 8597-8598, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 169.

¹⁰⁶ R. Vol. 34, p. 8450, EDMS 11998452, LDEQ Basis for Decision, p. 14 (detailing Formosa Plastics' modeled maximum ground-level concentration of ethylene oxide); R. Vol. 19, p. 4536, EDMS 11431688, Formosa Plastics' Updated Ethylene Oxide Analysis, p. 2, pdf. 4 (same); R. Vol. 34, pp. 8530-8531, EDMS 11998452, LDEQ Basis

the site reach as high as $0.41 \mu\text{g}/\text{m}^3$ —20 times the amount EPA considers an acceptable level of risk for cancer.¹⁰⁷ However, while LDEQ applied the EPA threshold “as a protective standard,”¹⁰⁸ the agency wrongfully and arbitrarily concluded that “the residential areas to the east and northeast of [the Chemical] Complex . . . would not be adversely impacted.”¹⁰⁹

Figure 1 - Formosa Plastics’ map showing extent of its modeled ethylene oxide concentration (red line) that exceeds the EPA threshold.¹¹⁰



LDEQ failed to recognize that areas inside the red line downriver of Formosa Plastics’ site (i.e., to the right of the site in Figure 2) is in an area the Parish has designated for “Residential Growth” in its master Land Use Plan. See Exhibit G (comparing image of map in section 82-25 of St. James Parish Land Use Plan with the facility Site Map to illustrate area downriver of Formosa Plastics’ site is designated as “Residential Growth” (yellow) and that modeled extent of ethylene oxide concentrations that exceed $0.02 \mu\text{g}/\text{m}^3$ extends downriver of the

for Decision, Response to Comment No. 64 (copying Formosa’s ethylene oxide modeled concentration contour map).

¹⁰⁷ R. Vol. 34, p. 8493, EDMS 11998452, LDEQ Basis for Decision, p. 14 (showing Formosa’s maximum ground-level concentrations of ethylene oxide beyond its site is $0.41 \mu\text{g}/\text{m}^3$)

¹⁰⁸ R. Vol. 34, p. 8495, EDMS 11998452, LDEQ Basis for Decision, p. 16 (“EPA suggests the concentration of [ethylene oxide] associated with a 1-in-10,000 cancer risk, for a lifetime of continuous exposure is $0.02 \mu\text{g}/\text{m}^3$.”). LDEQ states that use of $0.0002 \mu\text{g}/\text{m}^3$ is not reasonable to estimate a 1-in-1,000,000 risk and that use of $0.002 \mu\text{g}/\text{m}^3$ is not reasonable to estimate a 1-in-100,000 risk, but make no such claim about use of $0.02 \mu\text{g}/\text{m}^3$ to estimate a 1-in-10,000 risk, which is EPA’s cancer risk threshold). R. Vol. 34, pp. 8530-8531, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 66.

¹⁰⁹ R. Vol. 34, pp. 8497-8498, EDMS 11998452, LDEQ Basis for Decision, pp. 18-19.

¹¹⁰ R. Vol. 19, p. 4766, EDMS 11457119, Formosa Supplemental EAS, Jan. 7, 2019, Ex. P-1.

site).¹¹¹ LDEQ’s own evaluation of Formosa Plastics’ modeled emissions confirms that the Chemical Complex would create an unacceptable risk of cancer in this residential area.^{112, 113} LDEQ, thus, failed to consider the adverse effects the ethylene oxide emissions would have on people who would live in this area slated for “Residential Growth,” or the adverse effect such emissions might have on the ability of this predominantly Black district to expand its community. Not only is it arbitrary and capricious for LDEQ to limit its analysis to existing residences and structures in an area that the Parish has designated as “Residential Growth,” it is a blatant violation of the public trustee requirements, which mandates that LDEQ consider “potential and real adverse environmental effects.” *In re Am. Waste*, 633 So. 2d at 194 (emphasis added).

LDEQ also abused its discretion when it determined that “residential areas [] northeast of [the Chemical] Complex . . . would not be adversely impacted” by Formosa Plastics ethylene oxide emissions, referring to the community of Union across the River.¹¹⁴ LDEQ stated that the

¹¹¹ Petitioners ask that this Court take judicial notice of Section 82-25 of the St. James Parish Code of Ordinances, which codifies the Land Use Plan as amended and which is available on the St. James Parish Official website at <https://www.stjamesla.com/> under “Government” > “Code of Ordinances” > Chapter 82 Planning. The direct link to the Land Use Plan on the Parish’s website is: https://library.municode.com/la/st._james_parish_council/codes/code_of_ordinances?nodeId=PTIICOOR_CH82PL. La. C.E. art. 202(B) mandates “[a] court shall take judicial notice of . . . [o]rdinances enacted by any political subdivision of the State of Louisiana” “if a party requests it and provides the court with the information needed by it to comply with the request.” “St James Parish is a local governmental subdivision as defined by Article VI, Section 44 of the Louisiana Constitution.” SJP Home Rule Charter, Art. 1, Section A. Petitioners have provided the court with the information needed to comply with their request by providing access to the ordinances through an official government website. *See also Save Our Hills v. La. Dep’t of Env’tl. Quality*, 2018-0100 (La. App. 1 Cir. 11/5/18), 266 So. 3d 916, 922 (taking judicial notice parish code of ordinances in judicial review of LDEQ air permit decision); *Perry v. Par. of Jefferson*, 05-570 (La. App. 5 Cir. 1/31/06), 922 So. 2d 645, 646 (confirming trial court’s decision to take judicial notice of parish code of ordinances where ordinance “is published and readily available to both courts and litigants).

¹¹² R. Vol. 34, p. 8450, EDMS 11998452, LDEQ Basis for Decision, p. 14 (detailing Formosa Plastics’ modeled maximum ground-level concentration of ethylene oxide); R. Vol. 34, pp. 8530-8531, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 64 (copying Formosa’s ethylene oxide modeled concentration contour map).

¹¹³ R. Vol. 28, pp. 6931-6932, EDMS No. 11817927, Petitioners’ Aug. 12, 2019 Comments, pp. 69-70 (discussing the St. James Parish Land Use Plan, District 5 land use designation, and *A Plan Without People*); R. Vol. 28, pp. 6948-6953, EDMS 11817927No. 11819373, Petitioners’ Aug. 12, 2019 Comments, Attach A, Ex. 2, pp. 1-5 (*A Plan Without People* (discussing area of District 5 classified as “Residential” in 2011 Draft Land Use Plan and switched to “Residential/Future Industrial” in Land Use Plan as adopted in 2014)); LDEQ Second Unopposed Motion to Supplement the Administrative Record, Oct. 29, 2020, Ex. A, No. 3 (Public Comments by: . . . John King on behalf of FG LA LLC, p. 34), EDMS 11817937, pdf. 166 (citing St. James Parish Council Ordinance 18-02 passed May 2, 2018 and explaining that the ordinance converted the section of District 5 that had been originally designated as “Residential” in the 2011 Draft Land Use Plan to “Residential Growth”).

Petitioners also ask that this Court take judicial notice of St. James Parish Ordinance 18-02, which is available on the St. James Parish Official website, <https://www.stjamesla.com/> under “Government” > “Code of Ordinances” > “Code Comparative Table – Legislation-2019 Code” and also directly at https://library.municode.com/la/st._james_parish_council/ordinances/code_of_ordinances?nodeId=890523 (attaching as Exhibit 1 map “adopted and incorporated herein by reference to guide the development of St. James Parish” and showing area of District 5 is designated as Residential Growth).

¹¹⁴ R. Vol. 34, p. 8497, EDMS 11998452, LDEQ Basis for Decision, p. 18.

“red line[] is clearly south and west of Louisiana Highway 44 and does not extend into any residential areas on the eastern side of the Mississippi River.”¹¹⁵ First, the red line is *not* “clearly south and west of Louisiana Highway 44”—the map shows it actually eclipses the highway. *See* Exhibit H (showing magnified image of Formosa Plastics’ modeled ethylene oxide emission concentration map). Second, the agency applied an arbitrarily narrow concept of “residential area,” leaving out integral parts of the community such as the batture, levee, and the very road people use to enter their driveways and residential streets that are clearly within an area that exceeds the cancer risk threshold for ethylene oxide. LDEQ failed to “act with diligence, fairness and faithfulness” to protect this predominantly Black community of Union by arbitrarily finding that the people who live there would not be adversely impacted by harmful concentrations of ethylene oxide pollution simply because the red line stops just shy of the front doors of their homes.¹¹⁶ *Save Ourselves*, 452 So. 2d at 1157 (requiring the agency to “act with diligence, fairness and faithfulness to protect this particular public interest in the resources” such as the air people breathe).

LDEQ also relies on unsupported assumptions regarding ethylene oxide (a type of VOC) emission estimates (which are underestimated) and measures to control such emissions, and failed to require sufficient monitoring for ethylene oxide control measures.¹¹⁷

2. LDEQ’s reliance on the Louisiana Tumor Registry is without merit.

LDEQ improperly relies on the Louisiana Tumor Registry to dispute ethylene oxide’s cancer-causing effects by referring to the Registry’s reported cancer rates in census tracts with ethylene oxide sources.¹¹⁸ This contradicts the Registry’s own disclaimers. First, the Registry states that it “does not collect information on individual risk factor exposures, such as . . . exposure to environmental pollutants (i.e. years of exposure, exposure level, etc.)” from new air

¹¹⁵ R. Vol. 34, p. 8531, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 65; R. Vol 35, p. 8605, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 184.

¹¹⁶ R. Vol. 34, p. 8531, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 65; R. Vol 35, p. 8605, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 184 (same).

¹¹⁷ R. Vol. 3, pp. 0651, 0735-0736, EDMS 10878178, Ethylene Glycol 1 App, Dec. 20, 2017, pdf. pp. 14, 97-98; R. Vol. 28, pp. 6881-6885, 6893-6894, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments; Vol. 28 6991 – Vol. 29 7070, Petitioners’ Aug. 12, 2019 Comments, Attach. E, Ex. 1 (Sahu Aff.).

¹¹⁸ R. Vol. 34, p. 8496, EDMS 11998452, LDEQ Basis for Decision, p. 17. Likewise, LDEQ’s suggestion that TCEQ’s unvetted draft ethylene oxide risk value touted by an industry trade group warrants consideration is also without merit. R. Vol. 34, p. 8454, EDMS 11998452, LDEQ Basis for Decision, p. 18.

toxics sources like those LDEQ has permitted in St. James Parish.¹¹⁹ The Registry goes on to state that “[a]ssessing an individual’s exposure to [such factor] and [its] association with cancer would involve well-designed studies.”¹²⁰ LDEQ points to no such “well-designed study” using Registry data and ethylene oxide exposure.

3. LDEQ failed to require that Formosa Plastics’ avoid ethylene oxide emissions “to the maximum extent possible.”

Not only did LDEQ ignore the fact that Formosa Plastics’ modeled ethylene oxide emissions exceed the established cancer risk threshold for residential areas near the facility, LDEQ also failed to require measures to avoid the harmful effects of these emissions “to the maximum extent possible.” *In re Am. Waste*, 633 So. 2d at 194. For instance, LDEQ could have mandated fenceline monitoring to measure the concentrations of ethylene oxide emissions beyond Formosa’s site, which would enable Formosa Plastics to quickly identify, halt, and rectify excess emissions. But LDEQ impermissibly outsourced this responsibility to the Parish.¹²¹ The Title V permits merely state that Formosa Plastics “[c]omply with the air quality monitoring provisions set forth in Resolution St. James Parish Council.”¹²² That resolution requires Formosa Plastics’ to install fenceline monitoring along its eastern boundary¹²³ and send semi-annual summary reports of this monitoring to the Parish, not LDEQ.¹²⁴ However, as a Parish-only requirement, the Parish can choose to enforce the provisions or not, and is free to eliminate them at any time. Moreover, since nothing requires the Parish to send any of these reports to LDEQ, that agency may never see them. LDEQ cannot outsource monitoring of this dangerous toxic pollutant to the Parish and then claim that it has done its job to avoid harmful

¹¹⁹ LDEQ Second Unopposed Motion to Supplement the Administrative Record, Oct. 29, 2020, Ex. A, No. 3 (Public Comments by Machel Hall on behalf of Beverly Alexander, Ex. B (*Cancer Incidence in Louisiana by Census Tract, 2005-2015, Q & A*, July 2019, p. 3), EDMS 11817937, pdf. 11; *id.* at Ex. A, No. 2 (Supplemental Public Comments: by Earthjustice on behalf of RISE St. James, et al., pp. 1-4, dated 8/28/2019) (adopting Alexander’s comments), EDMS 11841221, p. 2, pdf. 3.

¹²⁰ *Id.*

¹²¹ R. Vol. 34, pp. 8521, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 48 (citing EDMS Doc ID 11489690, which is St. James Parish Council Resolution 19-07 that requires fenceline monitoring along the eastern boundary of Formosa Plastics’ site).

¹²² *See e.g.*, R. Vol. 33, p. 8147, EDMS 11998446, Ethylene Glycol 1 Permit, Condition 173, pdf. 46.

¹²³ The Parish’s fenceline monitoring requirement does nothing for the people who live across the river just one half mile away in Union. LDEQ claims that it “shall also require such monitors to be placed along a 1500 foot section of FG LA’s northeastern property boundary beginning at Highway 18 and extending southwest.” R. Vol. 34, p. 8456, EDMS 11998452, LDEQ Basis for Decision, p. 20. However, there is no such requirement in the permits. LDEQ cannot base its decision on a future condition.

¹²⁴ LDEQ Second Unopposed Motion to Supplement the Administrative Record, Oct. 29, 2020, Ex. A, No. 3 (Public Comments by: . . . John King on behalf of FG LA LLC, Ex. A, part H), EDMS 11817937, pdf. 181-82 (parish resolution 19-07 providing for monitoring “on the eastern boundary” only of Formosa’s site).

effects of ethylene oxide emissions “to the maximum extent possible.”

B. LDEQ violated state laws by failing to consider the impacts of Formosa Plastics’ ethylene oxide emissions on the Parish’s plan to encourage residential growth in District 5.

LDEQ’s failure to consider the effects of Formosa Plastics’ ethylene oxide emissions on the adjacent residential area of District 5 also violates state statute. La. R.S. § 33:109.1 provides that “[w]henver a parish or municipal planning commission has adopted a master plan, state agencies and departments *shall consider such adopted master plan before undertaking any activity or action which would affect the adopted elements of the master plan*” (emphasis added). Certainly, authorizing ethylene oxide emissions in concentrations that exceed EPA’s cancer risk threshold would affect the Parish’s master plan to encourage residential growth in the same area because people would not want to move to a cancer risk hot spot. And while LDEQ recognized that Formosa Plastics’ site “is located in an area specifically designated by St. James Parish for industrial development and is adjacent to other industrial properties,” the agency failed to also recognize that the downriver side of the site is adjacent to an area specifically designed by the Parish for residential growth.¹²⁵ Indeed, nowhere in the record did LDEQ “consider” how its “action” “would affect the adopted elements of the [St. James Parish] master plan,” namely the area designated for “Residential Growth” in District 5 that is directly downriver of Formosa Plastics’ site. La. R.S. 33:109.1; *St. Tammany Par. Gov’t v. Welsh*, 2015-1152 (La. App. 1 Cir. 3/9/16), 199 So. 3d 3, 1 (relying on ordinary meaning of “consider” to hold agency discharged obligation when it “examined, deliberated about, pondered over, and inspected” parish plan). LDEQ’s violation is especially egregious where the Parish had designated this area of predominantly Black District 5 as “Residential Growth” in order “to guide [] the development of St. James Parish.”¹²⁶ The Court should render LDEQ’s Decision illegal since it does not comply with the mandatory requirements of La. R.S. § 33:109.1.

C. The Court should vacate LDEQ’s Decision and remand the matter with instructions to adequately consider the impact of Formosa Plastics’ ethylene oxide emissions.

¹²⁵ R. Vol. 34, p. 8444, EDMS 11998452, LDEQ Basis for Decision, p. 8.

¹²⁶ St. James Parish Code of Ordinances, sec. 82-25 (providing that “[t]he map in subsection (a)(1) of this section, together with the text of this section, are collectively referred to herein as the “land use plan” and further providing that the “land use plan” [] is hereby declared to be a “master plan” as that term is used in . . . [La. R.S.] 33:109.1”).

As detailed above, the record fails to support LDEQ's conclusion by a preponderance of the evidence that "the permits will not allow for air quality impacts that could adversely affect human health or the environment," which makes such conclusion arbitrary and capricious.¹²⁷ The record also does not support LDEQ's conclusion by a preponderance of the evidence that "no further [ethylene oxide] emission reductions are required to protect public health," which also makes this conclusion arbitrary and capricious.¹²⁸ Because LDEQ's ultimate finding that "the proposed permits have minimized or avoided potential and real adverse environmental impacts to the maximum extent possible"¹²⁹ is based on these unsupported conclusions, the Court should reverse its Decision. *See In re W. Pearl River Navigation Project*, 94–2260, p. 3 (La. App. 1st Cir. 6/23/95), 657 So.2d 640, 641-42 (reversing and remanding agency decision as arbitrary and capricious and characterized by an abuse of discretion where record evidence did not support conclusion that the proposed activity would not pose environmental harm); *In re Oil & Gas Expl., Dev., & Prod. Facilities, Permit No. LAG260000*, 2010-1640, p. 2-3, 13-14 (La. App. 1st Cir. 6/10/11), 70 So. 3d 101, 103, 110-111 (remanding decision where record as a whole did not support agency's "determination by a preponderance of the evidence that the proposed permit has minimized or avoided potential and real adverse environmental impacts to the maximum extent"). Indeed, where LDEQ has failed to comply with its public trustee duty, the First Circuit has made clear that "any action taken not in compliance therewith, e.g., the issuance of the permit herein, is null and void and must be vacated." *In re Rubicon, Inc.*, 95-0108, p. 9, (La. App. 1st Cir. 2/14/1996); 670 So. 2d 475, 488-89 (emphasis added) (rejecting the agency's request for a simple remand). Moreover, LDEQ's failure to comply with the mandatory requirements of La. R.S. § 33:109.1 also renders its Decision illegal and thus void.

The Court should vacate the Decision and remand with instructions for LDEQ to (1) comply with La. R.S. § 33:109.1 and consider the impacts of Formosa Plastics' ethylene oxide emissions on the area of District 5 that the Parish has designated as "Residential Growth," (2) consider the impacts of Formosa Plastics' ethylene oxide emissions on the community of Union, and (3) make all fence-line monitoring requirements enforceable by both LDEQ and the public

¹²⁷ R. Vol. 35, p. 8589, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 155.

¹²⁸ R. Vol. 35, p. 8534, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 70.

¹²⁹ R. Vol. 34, p. 8522, EDMS 11998452, LDEQ Basis for Decision, p. 43.

through Title V permit conditions should the agency decide to authorize any ethylene oxide emissions.

III. LDEQ’s failure to consider the combined adverse impacts of Formosa Plastics’ toxic air pollutants violates the agency’s public trustee duty.

LDEQ issued a permit that allows Formosa Plastics to emit over 800 tpy (or 1,600,000 pounds) of 22 different toxic air pollutants.¹³⁰ These toxic pollutants include a trio of known human carcinogens—ethylene oxide, benzene and formaldehyde.¹³¹ Based on EPA data, only two other sources in the U.S., and one source in the state, emit ethylene oxide pollutants in an amount that exceeds Formosa Plastics’ permit limits.¹³² Similarly, only one plant in Louisiana and 5 plants elsewhere in the United States emitted more benzene than Formosa Plastics permits allow.¹³³ In other words, Formosa Plastics would be an enormous new source of both of these cancer-causing pollutants. In addition to these known carcinogens, eight more toxic air pollutants are suspected human carcinogens or known or suspected human reproductive toxins (i.e., 1,3-butadiene, acetaldehyde, dibutyl phthalate, ethyl benzene, naphthalene, phenol, styrene, and toluene).¹³⁴ The remaining toxic air pollutants cause serious human health impacts such as neurological problems.¹³⁵

LDEQ’s public trustee duty requires the agency to consider the whole picture, and “determine each permit application’s substantive result.” *See In re Am. Waste v. Pollution Control*, 93-3163 (La. 9/15/94), 642 So. 2d 1258, 1262. Other states that have a similar public trustee duty require the same. *See Robinson Twp. v. Pennsylvania*, 623 Pa. 564, 659 (2013) (holding that the public trustee duty extends to the interests of present and future beneficiaries, requiring trustees to balance long term, incremental environmental impacts in decisions involving natural resources); *Sullivan v. Resisting Env’t Destruction on Indigenous Lands*

¹³⁰ See Exhibit E (listing all 22 toxic air pollutants that the permits allow Formosa Plastics to emit); EDMS 11998452, LDEQ Basis for Decision, pp. 4-5.

¹³¹ See R. Vol. 28, p. 6903, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, p. 42 & n.160 (citing LAC 33:III.5112, Table 51.1).

¹³² R. Vol. 28, pp. 6903-6904, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, pp. 42-43 & n.161 (citing EPA’s 2017 Toxic Release Inventory, *TRI On-Site and Off-Site Reported Disposed of or Other Released Top 100 Facilities for Ethylene Oxide*, IASPUB.EPA.Gov).

¹³³ R. Vol. 28, pp. 6903-6904, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, pp. 42-43 & n.166 (citing EPA’s 2017 Toxic Release Inventory, *TRI On-Site and Off-Site Reported Disposed of or Other Released Top 100 Facilities for Benzene*, IASPUB.EPA.Gov).

¹³⁴ See R. Vol. 28, 6903, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, n.160 (citing LAC 33:III.5112, Table 51.1).

¹³⁵ See R. Vol. 30, p. 7438, EDMS 11960006, Petitioners’ Nov. 26, 2019 Supp. Comments, n.35-36.

(*REDOIL*), 311 P.3d 625, 634-35 (Alaska 2013) (holding that the state constitution requires state’s Department of Natural Resources to take a “hard look” at all factors relevant to the public interest, including consideration of cumulative impacts); *In re Water Use Permit Applications*, 9 P.3d 409, 455 (Haw. 2000) (citing *Save Ourselves*) (same). Furthermore, the NEPA regulations require assessing the baseline environmental conditions in the area, along with the impacts from the source and looking at reasonably foreseeable impacts. 40 C.F.R. § 1508.7 (2019) (requiring consideration of cumulative impacts); *see also* 42 U.S.C. § 4332(C)(2) (requiring both discussion of the “environmental impact of the proposed action,” as well as “*any adverse environmental effects* which cannot be avoided should the proposal be implemented”) (emphasis added); *Hanly v. Kleindienst*, 471 F.2d 823, 831 (2d Cir. 1972) (even a slight increase in adverse condition can “represent the straw that breaks the back of the environmental camel.”); *see also* 40 C.F.R. § 1502.15 (2020) (“The environmental impact statement shall succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration, *including the reasonably foreseeable environmental trends and planned actions in the area(s).*”) (emphasis added)).

Formosa Plastics’ 800 tons per year of almost two dozen different toxic air pollutants are on top of all of the toxic air pollutants from existing and newly permitted area facilities.¹³⁶ And even though area residents told LDEQ that St. James is full—that they cannot bear the toxic pollution from any more industrial plants—LDEQ failed to do a cumulative assessment. *See In re Am. Waste*, 633 So. 2d at 194 (requiring agency to analyze potential and real environmental effects of its action); *See In re Am. Waste*, 633 So. 2d at 1262 (requiring agency to “determine each permit application’s substantive result”). LDEQ failed to analyze the potential combined effect that Formosa Plastics’ toxic air pollutants could have on area residents. Instead, LDEQ evaluated each toxic air pollutant in isolation, ignoring the combined effects of toxic air pollutants and the most updated EPA health standards.¹³⁷ LDEQ completely dropped the ball on its duty to assess the full aggregate harm. The Court must order LDEQ to use available tools to analyze Formosa Plastics’ toxic air pollutant emissions, in combination with other sources’, to

¹³⁶ *See* R. Vol. 30, p. 7439-7440, EDMS 11960006, Petitioners’ Nov. 26, 2019 Supp. Comments, pp. 7-8.

¹³⁷ This is like trying to assess the total harm a hurricane might cause to an area that is already weakened by a previous storm without taking that into account, and by only looking at storm surge, and not wind potential, or rainfall potential, or the flood stage of nearby rivers prior to the storm, or the area’s levee protection, etc.

assess and minimize the potential health risks that St. James communities could face from this pollution.

A. LDEQ only considered toxic air emissions individually, neglecting the combined impact the total toxic load could have on area residents.

LDEQ failed to consider the combined impacts of all of Formosa Plastics' toxic air emissions in combination with the existing toxic air emissions that impact the community. Instead, LDEQ analyzed Formosa Plastics' toxic air emissions on a pollutant-by-pollutant basis.^{138, 139} Similarly, LDEQ did not require Formosa Plastics to consider toxic air pollutants from any other facility in combination with any of its own predicted toxic air pollutants.¹⁴⁰ Moreover, even in the Formosa Plastics' pollutant by pollutant analysis, LDEQ applied outdated ambient air quality standards. LDEQ has not updated the ambient air quality standards for any of the toxic pollutants at issue (except for acetaldehyde) in over 25 years, even though state regulations mandate that LDEQ "shall periodically, at least every 36 months, review and update the ambient air standards listed for each toxic air pollutant in LAC 33:III.5112, Table 51.2." *See* LAC 33:III.5112 (historical and explanatory notes).¹⁴¹ As a result, LDEQ's ambient air quality standards are inconsistent with current standards. For example, LDEQ's ambient air quality standard for ethylene oxide is completely out of step with the EPA's updated IRIS value, which reflects the best available science. *See supra* Argument, II, pp. 39-42. Argument. By foregoing its public trustee duty in favor of a box checking exercise, and relying on outdated ambient air quality standards, LDEQ's decision was arbitrary and capricious. *See In re Am. Waste.*, 633 So. 2d at 194 (La. App. 1st Cir. 1993).

B. LDEQ has the information and tools to assess Formosa Plastics' total toxic air pollutant load, but it chose not to do so.

LDEQ had all of the information that it needed to fulfill its constitutional duty to consider

¹³⁸ R. Vol. 35, p. 8589, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 155.

¹³⁹ The NAAQS analysis does not apply to toxic air pollutants. LAC 33:III.5103.A ("Toxic air pollutants . . . do not include those pollutants for which National Ambient Air Quality Standards have been established under section 108 of the Federal Clean Air Act.")

¹⁴⁰ While the dispersion modeling showed that several of Formosa Plastics' toxic air pollutants were greater than 7.5 percent of the Ambient Air Standard for that pollutant, the company was not required to include any offsite sources in its refined modeling because the offsite sources were outside the area of impact as per LDEQ's modeling guidance.

¹⁴¹ An exception is acetaldehyde, which LDEQ updated in 2002. LAC 33:III.5112, Table 51.2, Explanatory Note [14].

the full result of its permitting decision by analyzing the combined impact of Formosa Plastics' toxic air emissions along with existing permitted or actual toxic air emissions in the area. LDEQ can perform this assessment based on Formosa Plastics' air emission estimates, modeled concentrations, and underlying data. The agency also has access to EPA's Risk-Screening Environmental Indicators ("RSEI") model.¹⁴² This model incorporates EPA's inventory of reported releases of toxic chemicals, along with factors such as how the chemical moves through the environment (i.e., whether it dissipates quickly or travels a great distance), each chemical's relative toxicity, and the potential for human exposure."¹⁴³ The RSEI model adjusts for the severity of each pollutant's human health effects (typically an IRIS value where available) associated with long-term inhalation exposures.¹⁴⁴ Had LDEQ run the RSEI model with the information that it has about Formosa Plastics' toxic emissions, LDEQ would have obtained toxicity-weighted concentrations and a RSEI score for the impacted communities.¹⁴⁵ Though the information was readily available and provided by Petitioners well before LDEQ's decision, the agency did not attempt in any way to assess the total toxic load on area residents, either through RSEI or through any alternative model.

A recent study that The Advocate, together with the nonprofit news outlet ProPublica, published illustrates how LDEQ could have compiled this information and used it to assess relative impacts.¹⁴⁶ The study, which could not be more on point, analyzes the toxic air pollutants that LDEQ has authorized Formosa Plastics to emit together with existing toxic emissions from area sources.^{147, 148} The study used the same modeled toxic pollutant concentrations that LDEQ

¹⁴² *Id.*

¹⁴³ See R. Vol. 30, p. 7436, EDMS 11960006, Petitioners' Nov. 26, 2019 Supp. Comments, p. 4, n.18 (citing EPA Risk-Screening Environmental Indicators (RSEI) Model, <http://www.epa.gov/rsei>).

¹⁴⁴ See R. Vol. 30, p. 7436, EDMS 11960006, Petitioners' Nov. 26, 2019 Supp. Comments, p. 4, n.18 (citing EPA Risk-Screening Environmental Indicators (RSEI) Model, <http://www.epa.gov/rsei> ("The RSEI method for assigning toxicity weights is clear and reproducible, based on easily accessible and publicly available information, and uses expert EPA judgments to the greatest extent possible.")).

¹⁴⁵ See *id.*

¹⁴⁶ See R. Vol. 30, p. 7435, EDMS 11960006, Petitioners' Nov. 26, 2019 Supp. Comments, p. 3, n.17 (citing ProPublica, Polluter's Paradise, Environmental Impact in Louisiana, <https://www.propublica.org/series/polluters-paradise>).

¹⁴⁷ See R. Vol. 30, p. 7435, EDMS 11960006, Petitioners' Nov. 26, 2019 Supp. Comments, p. 3, n.18 (discussing and citing Lylla Younes, In a Notoriously Polluted Area of the Country, Massive New Chemical Plants Are Still Moving in, ProPublica, October 30, 2019, <https://projects.propublica.org/louisiana-toxic-air/>).

¹⁴⁸ The news groups hired air modeling expert Michael Petroni, a Ph.D. candidate at the State University of New York College of Environmental Science and Forestry and an expert in the EPA's Risk-Screening Environmental Indicators dataset. R. Vol. 30, p. 7435, EDMS 11960006, Petitioners' Nov. 26, 2019 Supp. Comments, n.18 (Lylla

relied on when it made its Decision, along with RSEI data.¹⁴⁹ Using this method, The Advocate study found that if Formosa Plastics emits the toxic pollutants that LDEQ ultimately authorized,¹⁵⁰ “the residents living across the Mississippi River [i.e., Union] will face double the toxic levels of cancer-causing chemicals than they currently do,” and that “[o]ne mile east in the St. James community, those levels could more than triple.”¹⁵¹ The study also found that “the air around Formosa’s site is already more toxic with cancer-causing chemicals than 99.6% of industrialized areas of the country,” and that “[i]f the complex emits all the chemicals it proposes in its permit application, it would rank in the top 1% nationwide of major plants in America in terms of the concentrations of cancer-causing chemicals in its vicinity.”¹⁵²

The Advocate study thus demonstrates that LDEQ had all of the tools necessary to assess full impacts to the neighboring communities, but the agency failed to use them. Indeed, LDEQ had the study well before it issued its Decision and it still failed to conduct a cumulative analysis.¹⁵³ The agency, therefore, failed to consider the potential impacts of its Decision on the air that area residents will breathe, as the public trustee duty requires. *See In re Am. Waste*, 633 So.2d at 194. Because LDEQ failed to analyze the combined effects of Formosa Plastics’ toxic air pollutants, the agency’s conclusion that the Permits “will not allow for air quality impacts that could adversely affect human health or the environment”¹⁵⁴ is arbitrary and capricious.

Furthermore, while LDEQ claims that RSEI is too conservative, LDEQ also acknowledges that it has the capability with its modeling and permit data to further refine RSEI’s results. But when presented with the Advocate study’s findings, LDEQ failed to use these tools to do a collective analysis based on the most current risk values that RSEI uses. Instead, it elided this responsibility by only looking at pollutants one at a time, using outdated air toxic values. LDEQ never actually addressed (or disputed) the Advocate study’s core finding that permitting

Younes, What Could Happen if a \$9.4 Billion Chemical Plant Comes to ‘Cancer Alley’, ProPublica, Nov. 18, 2019, <https://www.propublica.org/article/what-could-happen-if-a-9.4-billion-chemical-plant-comes-to-cancer-alley>.

¹⁴⁹ *Id.*

¹⁵⁰ The study relies on the emissions that LDEQ proposed to authorize in draft permits. LDEQ had not yet issued its final permit decision when this study came out, but there is no difference between the emission limits for toxic air pollutants in the draft decision and the final decision.

¹⁵¹ Lylla Younes, What Could Happen if a \$9.4 Billion Chemical Plant Comes to ‘Cancer Alley’, ProPublica, Nov. 18, 2019, <https://www.propublica.org/article/what-could-happen-if-a-9.4-billion-chemical-plant-comes-to-cancer-alley>.

¹⁵² *Id.*

¹⁵³ R. Vol. 30, pp. 7435-7436, EDMS 11960006, Petitioners’ Nov. 26, 2019 Supp. Comments, pdf. 5-6.

¹⁵⁴ R. Vol. 35, p. 8589, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 155.

the Chemical Complex on top of existing sources, could greatly increase health risks for communities that are already overburdened by such risks. LDEQ simply ignored the problem that the screening tool pointed out.

C. LDEQ’s reasons for failing to look at the combined effects of Formosa Plastic’s toxic air emissions are arbitrary and capricious.

LDEQ failed to analyze the combined effect of Formosa Plastics’ toxic air pollutants. Instead, the agency tried to justify its deficient pollutant-by-pollutant method by pointing to other data, each of which fails to provide any information on cumulative impacts.¹⁵⁵ Specifically, LDEQ conducted dispersion modeling, based on its outdated standards, for several of the toxic air pollutants individually, but that analysis never evaluated the aggregate pollution burden communities could face as a result of the Chemical Complex.¹⁵⁶ *See supra* Argument, III.A.&B. LDEQ also points to EJSCREEN data as sufficient to assess Formosa Plastics’ health impacts,¹⁵⁷ but EJSCREEN would not include *any* information about Formosa Plastics’ toxic air pollutants, nor would it include any information about the new sources of toxic air pollutants that LDEQ has recently permitted.¹⁵⁸ Notably, the agency also misuses the EJSCREEN data. *See infra* Argument, IV.B.2.

LDEQ’s reliance on the Louisiana Tumor Registry also is completely misplaced.¹⁵⁹ Indeed, the Registry’s own guidance states: “Given the data items routinely collected by the Louisiana Tumor Registry, this question [of whether Cancer Alley exists] cannot be answered.”¹⁶⁰ The document goes on say that there are only a “limited number of studies

¹⁵⁵ R. Vol. 35, pp. 8597-8598, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 169.

¹⁵⁶ *Id.* LDEQ also vaguely references “the other assessments conducted by LDEQ which show the maximum predicted concentrations of various toxic air pollutants will be well below recognized health-based thresholds,” citing to its responses to various comments. *Id.* (citing its response to comments 61, 64, 66, 68, and 113). However, none of the responses includes any information that could excuse LDEQ for failing to quantify combined effect of Formosa Plastics’ toxic air pollutants. *See* R. Vol. 34, p. 8529, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 61 (discussing IRIS RfCs as compared to LDEQ’s AAS for toxic air pollutants); R. Vol. 34, pp. 8530-8531, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 64 (discussing only ethylene oxide modeled maximum concentration); R. Vol. 34, pp. 8531-8532, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 66 (referring to standards for individual pollutants and ethylene oxide values); R. Vols. 34-35, pp. 8532-8533, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 68 (discussing acute values); R. Vol. 35, pp. 8563-8564, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 113 (discussing varying ambient air quality standards among states, specifically for benzene).

¹⁵⁷ R. Vol. 35, pp. 8597-8598, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 169.

¹⁵⁸ *See infra*. Argument, IV.B.2 (explaining limitations of EJSCREEN data).

¹⁵⁹ R. Vol. 35, pp. 8597-8598, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 169 (referencing Response to Comments, 60 and 86).

¹⁶⁰ LDEQ Second Unopposed Motion to Supplement the Administrative Record, Oct. 29, 2020, Ex. A, No. 3 (Public Comments by Machel Hall on behalf of Beverly Alexander, Ex. B (*Cancer Incidence in Louisiana by Census Tract, 2005-2015, Q & A*, July 2019, p. 3), EDMS 11817937, pdf. 11. The Registry’s Q&A goes on to say that

investigating whether residents in the industrial corridor have an increased cancer risk,” emphasizing why it was so critical for LDEQ to conduct a robust cumulative impacts analysis.¹⁶¹ Additionally, the Registry cannot account for emissions from facilities that are not yet operational. The Registry also does not consider pollution exposure.

In sum, not one of these factors—individually or taken together—supports LDEQ’s conclusion that “further analyses are [not] required in order to adequately assess the impact of the [Formosa Plastics] Complex on human health and the environment.”¹⁶²

LDEQ’s conclusion that “the permits could not adversely affect human health and the environment” is arbitrary and capricious. *See In re Am. Waste*, 633 So.2d at 194. The Court therefore should vacate LDEQ’s Decision. *In re Rubicon, Inc.*, 95-0108, p. 9 (La. App. 1st Cir. 2/14/1996); 670 So.2d 475, 488-89 (“Until DEQ, as the agency designated by the legislature with the responsibility to protect the environment, fully complies with its responsibilities and obligations, any action taken not in compliance therewith, e.g., the issuance of the permit herein, *is null and void and must be vacated.*”) (emphasis added)). The Court should further instruct LDEQ to assess the combined impact of the total amount of toxic air pollutants authorized by the permits along with existing permitted or actual toxic air emissions that impact residential areas near Formosa Plastics’ site, and to use the RSEI model (or something comparable) to analyze the weighted toxic effect of Formosa Plastics’ emissions on area residents.

IV. LDEQ violated its public trustee duty by failing to consider the disproportionate impact that its Decision would have on Black communities near Formosa Plastics’ site.¹⁶³

LDEQ failed to acknowledge the high concentration of minority residents living in the area Formosa Plastics proposed to build, or conduct any meaningful analysis of whether the

determining whether pollutant exposure is associated with cancer “would involve well-designed research studies” and that there are only a “limited number of studies investigating whether residents in the industrial corridor have an increased cancer risk.” *See* LDEQ’s Second Unopposed Motion to Supplement the Administrative Record (Oct. 29, 2020). *See also* LDEQ Second Unopposed Motion to Supplement the Administrative Record, Oct. 29, 2020, Ex. A, No. 2 (Supplemental Public Comments: by Earthjustice on behalf of RISE St. James, et al., pp. 1-4, dated 8/28/2019) (adopting Alexander’s comments), EDMS 11841221, p. 2, pdf. 3.

¹⁶¹ *Id.*

¹⁶² R. Vol. 35, pp. 8597-8598, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 169.

¹⁶³ R. Vol. 28, pp. 6930-6940, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, p. 68-78, n.278 (raising environmental justice as a public trustee concern); LDEQ Second Unopposed Motion to Supplement the Administrative Record, Oct. 29, 2020, Ex. A, No. 3 (Public Comments by Machel Hall on behalf of Beverly Alexander, pp. 2-5), EDMS 11817937, pdf. 2-5; *id.* at Ex. A, No. 2 (Supplemental Public Comments: by Earthjustice on behalf of RISE St. James, et al., pp. 1-4, dated 8/28/2019) (adopting Alexander’s comments), EDMS 11841221, p. 2, pdf. 3.

predominantly Black communities near the site would suffer a disproportionate share of environmental impacts, even as the record is replete with evidence that Chemical Complex's air pollutants would greatly add to the burden those Black communities bear from LDEQ's previous permit decisions. The Court must vacate the Decision and order LDEQ to conduct the environmental justice analysis required as a public trustee, on remand.

A. LDEQ has a duty to consider the impact of its decision on minority communities.

In carrying out its public trust duty, LDEQ must give full and careful consideration to the potential negative social and environmental consequences of its decision. *Save Ourselves*, 452 So. 2d at 1157 (La. 1984) (discussing the agency's mandated balancing process). As LDEQ acknowledges, this necessarily requires LDEQ to consider environmental justice concerns.¹⁶⁴ To conduct a meaningful environmental justice analysis, LDEQ must first determine whether there are any minority communities in the area and then analyze the burden and disproportionate impact of the Chemical Complex on these communities, but LDEQ failed to do either of these things. *See Friends of Buckingham v. State Air Pollution Control Bd.*, 947 F.3d 68, 87-92 (4th Cir. 2020) (detailing the steps of an environmental justice analysis in case involving state environmental justice requirements that are similar to Louisiana's public trustee mandate); *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs*, 255 F. Supp. 3d 101, 140 (D.D.C. 2017) (requiring agency "to determine whether a project will have a disproportionately adverse effect on minority and low income populations"); *Coliseum Square Ass'n v. Jackson*, 465 F.3d 215, 232 (5th Cir. 2006) (reviewing federal agency's environmental justice analysis in housing redevelopment project and considering agency's findings regarding residents' minority status, as well as social, health, and environmental impacts of the project on surrounding communities); *Cmtys. Against Runway Expansion, Inc. v. F.A.A.*, 355 F.3d 678, 689 (D.C. Cir. 2004) (finding that where the agency included an environmental justice analysis in its evaluation of project impacts, "that analysis [] is properly subject to arbitrary and capricious review under the APA.").

¹⁶⁴ R. Vol. 34, pp. 8471-8477, EDMS 11998452, LDEQ Basis for Decision, pp. 35-41 (LDEQ's environmental justice discussion); R. Vol. 34, p. 8471, EDMS 11998452, LDEQ Basis for Decision, p. 35 (acknowledging that "[e]nvironmental justice is the fair treatment . . . of all people regardless of race," which in turn means that "no group of people should bear a disproportionate share of the negative environmental consequences resulting from industrial operations").

In addition to environmental consequences, LDEQ’s environmental justice analysis must consider, more broadly, how the massive Chemical Complex would threaten the predominantly Black communities near the site, such as by restricting growth or hastening their decline. *See Matter of Dravo Basic Materials Co., Inc.*, 604 So. 2d 630, 635 (La. 1st Cir. 1992) (finding “DEQ’s inquiry is not limited to the discharged substance,” but includes “the entire activity which results in the discharge, as well as the effect of the discharge on the environment in general”). Indeed, the Louisiana Constitution mandates “[a] public trust for the protection, conservation, and replenishment of the environment, *including the healthful, scenic, historic, and esthetics quality of the environment.*” *Id.* (emphasis added). LDEQ must consider the effect that the planned Chemical Complex would have on the “way of life” in these historic African American communities. *See In re CECOS Int’l, Inc. (“CECOS”) Livingston Facility Permit Application No. LAD00618298*, 574 So. 2d 385, 392 (La. 1st Cir. 1990) (explaining that the public trustee analysis requires “[a] balancing [] to insure protection of the environment without too high a cost to the economy *and our way of life*”) (emphasis added).

B. LDEQ failed to carry out its duty to consider the impact of its Decision on minority communities.

1. LDEQ ignored the racial makeup of area communities.

An environmental justice or social impact analysis must evaluate the demographics of the impacted population. *See Friends of Buckingham v. State Air Pollution Control Bd.*, 947 F.3d 68, 93 (4th Cir. 2020) (overturning the agency’s decision for “fail[ing] to make any findings regarding the demographics of [the community] that would have allowed for a meaningful assessment of the likelihood of disproportionate harm”). LDEQ skipped this fundamental step, ignoring historic Black communities in St. James.¹⁶⁵ Furthermore, LDEQ failed to acknowledge, let alone make a finding, that the communities near Formosa Plastics’ site are majority Black.¹⁶⁶

¹⁶⁵ LDEQ’s only reference to population (let alone demographics) is its statement that “EJSCREEN reports the population within a one-mile radius from the center of the facility to be zero.” R. Vol. 35, p. 8582, EDMS 11998452, LDEQ Basis for Decision, Response to Comment No. 138. This is both insufficient and incorrect. Formosa Plastics’ 2,400-acre site, with polluting facilities spread throughout, is over three miles long and at least a half-mile wide at its narrowest point, putting much of the site within the one-mile radius of the center of the facility.

¹⁶⁶ *See* R. Vol. 35, p. 8576, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 126 (explaining that LDEQ addresses “[t]he matter of environmental justice [] in Section IX of the Basis for Decision and [its] Response to Comment Nos. 85-87). Nowhere in these sections nor anywhere else in the LDEQ’s decision document does the agency make a finding about the racial makeup of the area communities.

For instance, LDEQ did not even mention the demographic makeup of the majority Black community of Union across the Mississippi River just a half mile from site, or the majority Black District 5 communities of Welcome and St. James that are downriver just beyond the one-mile range.¹⁶⁷ LDEQ's misleading framing is remarkably like Formosa Plastics' disingenuous statement that the "neighborhood" closest to the site "is 90% white," referencing a tiny area near the plant with a population of two.¹⁶⁸ LDEQ's failure to grapple with the demographics for the actual communities in the area renders its analysis arbitrary and capricious, and therefore, invalid.

LDEQ also ignored race in concluding "there are no alternative sites that would offer more protection to the environment than the proposed site without unduly curtailing non-environmental benefits."¹⁶⁹ LDEQ made this determination after accepting Formosa's extremely limited geographic scope.¹⁷⁰ An agency may not arbitrarily restrict the search for alternatives, particularly where such arbitrary restrictions only yield one viable alternative. *See In re Browning-Ferris Indus. Petit Bois Landfill*, 93-2050 (La. App. 1st Cir. 6/23/95), 657 So.2d 633, 639. Formosa's stated goal for its project is "to construct and operate a Facility to produce various petrochemical-based products for sale to domestic and international customers which can be shipped using a variety of methods."¹⁷¹ Though Formosa's project goal is extremely broad, and not tied to a particular region, LDEQ allowed Formosa Plastics to limit its search to a small geographic region (Ascension, St. James, and St. John parishes). It apparently accepted Formosa's assertion that "it simply would not be possible to place the site along the river without an African-American community being present somewhere in the general vicinity,"¹⁷² never mind the fact that the Mississippi River is not the only waterway that can handle a dock. LDEQ's failure to consider impacts on minority communities when evaluating alternatives further renders its Decision null and void.

2. LDEQ misused data to avoid a meaningful analysis of the impact of air pollution on minority communities.

¹⁶⁷ *Id.*

¹⁶⁸ R. Vol. 19, p. 4757, EDMS 11457119, Formosa's Supplemental EAS, p. 26, n.23, Figure E, pdf. 27 (citing to Justicemap.org).

¹⁶⁹ R. Vol. 34, pp. 8442-8444, EDMS 11998452, LDEQ Basis for Decision, pp. 6-8.

¹⁷⁰ *Id.*

¹⁷¹ R. Vol. 14, p. 3462, EDMS 11230529, Formosa's EAS, July 19, 2018, p 34, pdf. 35.

¹⁷² R. Vol. 14, p. 3454, EDMS 11230529, Formosa's EAS, July 19, 2018, p. 26, pdf. 27.

To do an effective environmental justice analysis, LDEQ must include the pollutants that it has already permitted in the area of minority communities in St. James Parish, like Union, Welcome, and St. James, along with the new pollutants associated with the Chemical Complex.¹⁷³ Instead, LDEQ made several misleading, and unavailing arguments to avoid confronting the full harm to these communities.

For instance, in LDEQ's discussion of EJScreen data for Welcome, the agency ignored the actual EJ Indexes for the community of over 1000 people and chose to look *only* at the "Environmental Indicators". The EJScreen combines "Demographic Indicators" with the "Environmental Indicators" to create the EJ Indexes that measure the disproportionate pollution burden borne by communities of color or low-income communities.¹⁷⁴ In other words, an area that has a high minority population would have an EJ Index that is higher (more concerning) than an area that is predominantly white because race is a factor when determining the overall environmental justice value or score for the area. Welcome has a 93 percent minority population.¹⁷⁵ But LDEQ obscured the fact that Welcome's overwhelmingly Black population, combined with the high cancer risk the area faces, puts Welcome at the 89th percentile of the EJ Index in the State for cancer risks.¹⁷⁶ Welcome is also at the 89th percentile in the State for EPA's measure of respiratory hazards from pollution and for PM_{2.5}, more specifically.¹⁷⁷ By plucking out the values for the "Environmental Indicators" and looking at them in isolation, LDEQ removed important "demographic [] indicator[s] of potential susceptibility to environmental pollution."¹⁷⁸ Indeed, EJScreen shows that Welcome is a community that is overburdened by environmental impacts. This EJScreen information does not even account for

¹⁷³ See *Friends of Buckingham*, 947 F.3d at 91-92 (finding that permitting agency's environmental justice analysis of project emissions was flawed because the agency relied on air quality standards, rather than whether the nearby minority communities would be disproportionately impacted by the resulting pollution.)

¹⁷⁴ R. Vol. 34, p. 8475, EDMS 11998452, LDEQ Basis for Decision, p. 39 ("In the instant case, EJSCREEN data shows that residents of the community closest to the [Chemical] Complex do *not* bear a disproportionate share of the negative environmental consequences resulting from industrial operations.").

¹⁷⁵ R. Vol. 29, p. 7116, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, Attach K, pdf. 256255.

¹⁷⁶ *Id.*

¹⁷⁷ *Id.* Pending the Court's decision on Intervenor Beverly Alexander's Motion for Judicial Notice, Oct. 6, 2020, Petitioners also adopt and incorporate Ex. A attached to that motion (showing EJ Indexes for PM_{2.5} at 91 percentile in the state, NATA Air Toxic Cancer Risk at 95 percentile in the state, and NATA Respiratory Hazard at 91 percentile in the state).

¹⁷⁸ R. Vol. 34, p. 8475, EDMS 11998452, LDEQ Basis for Decision, p. 39, n.114 (citing Petitioners' Aug. 12, 2019 Comments, p. 69, n.279 (citing EPA, EJSCREEN: Environmental Justice Screening and Mapping Tool, <https://www.epa.gov/ejscreen> (click on What is EJSCREEN?))

the wave of new industrial sources that have permits to emit major amounts of air pollutants but are not yet operating, such as the two world-scale methanol plants that have permits to construct in St. James.¹⁷⁹ But LDEQ did not acknowledge the EJScreen Indexes.

Instead of looking at the environmental justice communities at issue, LDEQ made misleading arguments that emissions in St. James Parish as a whole have decreased more than the rest of the state on average.¹⁸⁰ A parish-wide look, however, says nothing about the relative amount of emissions these predominantly African American communities near Formosa Plastics' site bear in relation to other areas of the Parish or state. Furthermore, data showing that emissions have decreased by a greater *percentage* in St. James Parish as compared to the rest of the state is meaningless given that St. James is a heavily industrialized parish where emissions started at a higher level and still outpace other areas of the state.¹⁸¹

LDEQ claimed that it “evaluated trends in permitted emissions from all major sources located within five miles of the [Formosa] Complex and the community of Welcome,”¹⁸² But the agency did not conduct an adequate or fair analysis. Instead, it cherry-picked data, looking only at criteria pollutants and not at toxic air pollutants when reviewing the area closer to Formosa Plastics' site.¹⁸³ In addition, LDEQ lumped the criteria pollutants together though their health impacts vary. LDEQ failed to provide any information about whether PM_{2.5} emissions have increased or decreased, even though that pollutant has severe health effects such as heart attacks, respiratory diseases, and premature death.¹⁸⁴ Rather than considering data from multiple

¹⁷⁹ R. Vol. 28, pp. 6867, 6937, 6939, 6940, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, pp. 6, 75, 77-78 (discussing and providing permitted air emissions for South Louisiana Methanol and YCI Methanol, two new chemical plants planned for St. James and the major expansion at Nucor Steel). EJScreen air toxics data are based on National Air Toxics Assessment (“NATA”). R. Vol. 28, p. 6931, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, p. 69, n.279 (citing EPA, EJSCREEN: Environmental Justice Screening and Mapping Tool, <https://www.epa.gov/ejscreen> (click on What is EJSCREEN?)). The most recent NATA uses 2014 National Emissions Inventory data to estimate health risks from toxic air pollutants. R. Vol. 29, p. 7116, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, Attach K, pdf. 256. (citing EPA NATA, <https://www.epa.gov/national-air-toxics-assessment>).

¹⁸⁰ See R. Vol. 34, pp. 8476-8577, EDMS 11998452, Basis for Decision, pp. 40-41; R. Vol. 35, pp. 8543-8545, EDMS 11998452, LDEQ & Response to Comment 86.

¹⁸¹ *Id.* For an honest look at Parish-wide impacts (which are not even relevant to this environmental justice analysis), LDEQ would have to compare the amount of pollution that industry actually emits (or is permitted to emit) in the Parish as compared to the rest of the state.

¹⁸² R. Vol. 34, p. 8477, EDMS 11998452, LDEQ Basis for Decision, p. 41.

¹⁸³ *Id.* (stating that “[s]ince 2015, permitted emissions of *criteria pollutants* have decreased by almost 33,000 tons”) (emphasis added). See *supra*, Facts pp. 10-11 (discussing criteria pollutants). Pending the Court’s decision on Intervenor Beverly Alexander’s Motion for Judicial Notice, Oct. 6, 2020, Petitioners also adopt and incorporate Ex. B attached to that motion (Affidavit of Kimberly Terrell, Ph.D. showing that LDEQ’s statement that criterial pollutants have decreased is inaccurate).

¹⁸⁴ See *supra*, n.53.

facilities, LDEQ actually cherry-picked a single plant—CF Industries, located five miles upriver in Donaldsonville in Ascension Parish.¹⁸⁵ LDEQ said that “[s]ince 1996, actual emissions of criteria pollutants and [toxic air pollutants from this facility] have decreased.”¹⁸⁶ But LDEQ provides no evidence to support this claim.¹⁸⁷ Finally, whether emissions have increased or decreased is not a measure of whether an area is disproportionately impacted. The question is whether the minority communities are unfairly impacted by industrial pollution. *See Standing Rock*, 255 F. Supp. 3d at 140 (finding that environmental justice analysis was flawed because agency did not consider environmental harms unique to environmental justice communities). LDEQ’s analysis does not address that question. Rather, the data indicate that Welcome is already such an overburdened, minority community.

3. LDEQ failed to account for the enormous added burden of the Chemical.

The record shows that LDEQ’s Decision authorizes Formosa Plastics to emit enormous amounts of pollutants that would exacerbate the burden on the predominantly Black communities near the site. *See supra* Facts, I, II (detailing the amount of pollutants the permits authorize Formosa Plastics to emit); Argument, III.B. (discussing studies showing Formosa Plastics’ permitted air pollutants would double and triple toxic levels of cancer-causing chemicals in the area would double Parish-wide emissions). The record also shows that the amount of ethylene oxide emissions that LDEQ has authorized creates an unacceptable risk of cancer for the adjacent area of predominantly Black District 5, which the Parish has designated for “Residential Growth,” and that this unacceptable risk level extends across the river to Union. *See supra* Argument, II.A.1.

Formosa Plastics’ air modeling also shows exceedances of PM_{2.5} (i.e., a “hot spot”) at Burton Lane. *See supra*, Argument, I.B.1. In this instance, LDEQ’s limited analysis of the localized impacts of PM_{2.5} evinces a failure to properly consider the disproportionate impact on the local community. *Friends of Buckingham*, 947 F.3d at 92. In addition to its direct air and hazard impacts, the Formosa Plastics mega complex would indeed reshape the character of District 5, placing fourteen major source plants a mile from historic African American

¹⁸⁵ R. Vol. 35, p. 8544, EDMS 11998452, LDEQ Basis for Decision, Response to Comment 86, pdf. 108.

¹⁸⁶ *Id.*

¹⁸⁷ *See id.*

communities and directly adjacent to land slated for residential growth. *See supra* Argument, II.A.1. But, LDEQ impermissibly ignored all of these impacts. *See Standing Rock*, 255 F. Supp. 3d at 140 (finding that environmental justice analysis was flawed because it was silent on distinct social and cultural factors that would amplify environmental impacts of project)

C. The Court should vacate and remand LDEQ’s Decision to issue the Permits.

LDEQ’s failure to acknowledge race, misuse of EJScreen, focus on trends without doing an actual emissions comparison, failure to consider the impact of the Chemical Complex on the communities surrounding the facilities, among other omissions, renders LDEQ’s conclusion on environmental justice arbitrary and capricious and a violation of its public trustee duty. For this reason, the Court should vacate LDEQ’s Decision and remand to the agency with instructions to perform a meaningful analysis that corrects the deficiencies discussed. *See Friends of Buckingham*, 947 F.3d at 94 (vacating and remanding to the agency “to make findings with regard to conflicting evidence in the record, the particular stud(ies) it relied on, and the corresponding local character and degree of injury from particulate matter and toxic substances threatened by [the facility]”).

V. LDEQ violated its public trustee duty by authorizing Formosa Plastics to emit over 13.6 million tons per year of greenhouse gas (“GHG”) emissions without considering the environmental impacts associated with these emissions.

A. The public trust duty mandated by the Louisiana Constitution and Louisiana Supreme Court and the plan for managing coastal land loss require LDEQ to evaluate the climate change-related impacts of its actions.

Step one of the public trustee analysis requires the agency to assess the “potential and real adverse environmental effects” of its proposed decision, which includes an assessment of climate-related impacts. *See In re Am. Waste*, 633 So.2d at 194; *see also Save Ourselves*, 452 So. 2d at 1157 (La. 1984). LDEQ also has an obligation to ensure that all of its permitting decisions are consistent with Louisiana’s Comprehensive Master Plan for a Sustainable Coast (the “Master Plan”) and protection of the state’s coastline.¹⁸⁸ *See Avenal v. State*, 2003-3521 (La. 10/19/04, 23); 886 So.2d 1085, 1101 (“We find that the implementation of the Caernarvon coastal

¹⁸⁸ R. Vol. 28, p. 6920, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, p. 58, n.229 (discussing the Master Plan and citing *Louisiana’s Comprehensive Master Plan for a Sustainable Coast*, COASTAL.LA.GOV ES-2 (June 2, 2017), http://coastal.la.gov/wp-content/uploads/2017/04/2017-Coastal-Master-Plan_Web-Book_CFinalwith-Effective-Date-06092017.pdf).

diversion project fits precisely within the public trust doctrine. The public resource at issue is our very coastline, the loss of which is occurring at an alarming rate.”); La. Exec. Order No. JBE-16-09 (Apr. 4, 2016) (ordering that “all state agencies . . . shall administer their regulatory practices, programs, projects, contracts, grants, and all other functions vested in them in a manner consistent with the Coastal Master Plan and public interest to the maximum extent possible.”).

Louisiana is on the frontline of the catastrophic harm caused by warming oceans, sea level rise, and increased storm intensity and flooding. As scientists for the federal government highlighted, “[h]uman-caused climate warming increased the chances of the torrential rains that unleashed devastating floods in south Louisiana in mid-August [2016] by at least 40 percent.”¹⁸⁹ The Louisiana’s Coastal Protection and Restoration Authority, which administers the Master Plan, further explained, that the Louisiana coast “is disappearing at an alarming rate,” and “[t]he major causes of this land loss include the effects of climate change, sea level rise, subsidence, hurricanes, storm surges, disconnection of the Mississippi River from coastal marshes, and human impacts.”¹⁹⁰ The Authority specifically noted that coastal restoration becomes progressively more difficult to accomplish the more climate-change-induced sea-level-rise increases.¹⁹¹

Approving Formosa Plastics’ complex is inconsistent with protecting Louisiana from the worst impacts of climate change and would worsen environmental costs the state will face in the climate crisis. LDEQ allowed Formosa Plastics to emit nearly 14 million tons of greenhouse gases (“GHGs”) annually, equivalent to three and a half coal-fired power plants, and as much as some states.¹⁹² Formosa’s permitted greenhouse gases would increase Louisiana’s total energy related GHG emissions by 6.5% above 2016 levels.¹⁹³ Formosa would add these massive

¹⁸⁹ R. Vol. 29, p. 7098, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, Attach H, p. 3, n.11 (citing U.S. Department of Commerce, National Oceanic and Atmospheric Administration, “Climate change increased chances of record rains in Louisiana by at least 40 percent” (Sept. 7, 2016), available at <https://www.noaa.gov/media-release/climate-change-increased-chances-of-record-rains-in-louisiana-by-at-least-40-percent>).

¹⁹⁰ R. Vol. 28, p. 6920, EDMS 11817927, Petitioners’ Aug. 12, 2019 Comments, p. 58, n.229 (discussing and citing CPRA, La.’s Comprehensive Master Plan for a Sustainable Coast, at ES-2 (2017), available at http://coastal.la.gov/wp-content/uploads/2017/04/2017-Coastal-Master-Plan_Web-Book_CFinal-with-Effective-Date-06092017.pdf).

¹⁹¹ *Id.* at 48.

¹⁹² See U.S. Energy Information Agency, Energy-Related Carbon Dioxide Emission by State, 2005-2016, Table 4, <https://www.eia.gov/environment/emissions/state/analysis/pdf/table4.pdf> (providing energy-related CO2 emissions account for the following sectors: commercial, electric power, residential, industrial, and transportation).

¹⁹³ U.S. Energy Information Agency, Energy-Related Carbon Dioxide Emission by State, 2005-2016, Table 4, <https://www.eia.gov/environment/emissions/state/analysis/pdf/table4.pdf>.

emissions each year for decades,¹⁹⁴ at a time when Louisiana can ill afford them and plans to reduce its emissions. As Governor Edwards recently recognized in an Executive Order, scientists from the Intergovernmental Panel on Climate Change (“IPCC”) have concluded that minimizing the worst impacts of climate change requires reducing global greenhouse gas emissions by about 45 percent from 2010 levels by 2030 and reaching net-zero emissions by around 2050.¹⁹⁵

Governor Edwards made clear that Louisiana must be part of this effort to reduce emissions on the IPCC’s timetable, or else our state could suffer some of the worst consequences.¹⁹⁶

While LDEQ acknowledges the science that GHGs affect the climate,¹⁹⁷ it failed to address the climate consequences of the Chemical Complex to the state or to grapple with the environmental, economic, or social cost of the greenhouse gas emissions from Formosa’s project. In issuing Formosa’s permit, LDEQ skipped step one of the public trust analysis by neglecting to carry out its duty to evaluate these environmental, economic and social impacts.

B. Neither the record nor case law supports LDEQ’s reasons for failing to consider the environmental impacts of Formosa Plastic’s GHG emissions.

LDEQ authorized Formosa Plastics to unleash 13.6 million tons of GHGs per year into the atmosphere without attempting to grapple in any way with the climate-related impacts of those emissions, as the public trustee duty requires. Instead, LDEQ offered excuses for not doing this analysis, all of which should be rejected as arbitrary and capricious.

1. LDEQ’s claim that it need not consider the climate impacts of its Decision because it is not possible to fingerprint the effect of Formosa’s greenhouse gas emissions is unsupported and contradicts decisions that have considered the issue.

LDEQ claims that it cannot assess the greenhouse gas impacts because “there is no current methodology or guidance to determine how a specified industrial facility’s incremental contribution of GHGs would translate into physical effects on the global environment.”¹⁹⁸ LDEQ

¹⁹⁴ The almost 14 million tpy of greenhouse gases only include those emissions that would be directly emitted by the Chemical Complex and do not account for upstream emissions from fracking and transporting feedstock, nor the downstream emissions that would result from incinerating plastic waste.

¹⁹⁵ Exec. Order JBE 2020-18, “Climate Initiatives Task Force” (Aug. 19, 2020), <https://gov.louisiana.gov/assets/ExecutiveOrders/2020/JBE-2020-18-Climate-Initiatives-Task-Force.pdf>. Petitioners

¹⁹⁶ *Id.* (“[T]o improve our resilience, sustain our coast, and help avoid the worst impacts of climate change, Louisiana must proactively work to reduce the greenhouse gas emissions that are driving up global temperatures, raising sea levels, and increasing risk that threaten our health and safety, quality of life, economic growth, and vital habitats and ecosystems.”).

¹⁹⁷ R. Vol. 34, p. 8458, EDMS 11998452, LDEQ Basis for Decision, p. 22.

¹⁹⁸ R. Vol. 34, p. 8457, EDMS 11998452, LDEQ Basis for Decision, p. 21.

relies on a nearly decade-old EPA guidance document, stating that “[q]uantifying these exact impacts attributable to the specific GHG source obtaining a permit in specific places is not currently possible with climate change modeling.”¹⁹⁹ However, the public trustee duty does not require exactness. Indeed, if it did, LDEQ could avoid considering environmental impacts of all sorts. Air pollutants disperse in the air, and wind can carry pollutants far from their source. Mercury emissions, for example, “are a global problem that knows no national or continental boundaries[,]” and “can travel thousands of miles in the atmosphere before it is eventually deposited back to the earth.”²⁰⁰ Indeed, many courts have affirmed the need and ability to assess GHG impacts. *See NHTSA*, 538 F.3d at 1217 (“[T]he fact that climate change is largely a global phenomenon that includes actions that are outside of [the agency’s] control . . . does not release the agency from the duty of assessing the effects of *its* actions on global warming within the context of other actions that also affect global warming.”) (internal quotations omitted)). *Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (“Quantification [of GHGs] would permit the agency to compare the emissions from this project to emissions from other projects, to total emissions from the state or the region, or to regional or national emissions-control goals.”). *Ctr. for Biological Diversity v. Nat’l Highway Traffic Safety Admin. (NHTSA)*, 538 F.3d 1172, 1200 (9th Cir. 2008) (requiring agency to analyze the “actual environmental effects resulting from . . . emissions” of GHG, not just quantify them); *WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 67-78 (D.D.C. 2019) (finding agency failed to adequately address the potential impacts of GHG emissions on climate change for oil and gas leases); *Montana Env’tl. Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1094 (D. Mont. 2017) (holding that agency failed to adequately assess the impacts of GHG emissions from the combustion of coal mined from the project). LDEQ cannot avoid its duty just because it cannot quantify the exact impact of Formosa Plastic’s GHG emissions at a specific place in Louisiana.

2. LDEQ arbitrarily rejects known methods for determining the costs associated with greenhouse gas emissions.

¹⁹⁹ R. Vol. 34, p. 8458, EDMS 11998452, LDEQ Basis for Decision, p. 22 (citing “PSD and Title V Permitting Guidance for Greenhouse Gases.” EPA-457/8-11-001. March 2011 (pp. 41-42)).

²⁰⁰ U.S. EPA, Mercury Emissions: The Global Context, https://19january2017snapshot.epa.gov/international-cooperation/mercury-emissions-global-context_.html#:~:text=Mercury%20emissions%20are%20a%20global,or%20in%20dry%20gaseous%20form.

It is arbitrary and capricious for LDEQ to tout the benefits of Formosa Plastics' project but then ignore the costs associated with its GHG emissions. Several courts have found that an agency has a duty to analyze the costs associated with GHGs, especially where the agency had quantified the benefits of the project, as LDEQ has done here.²⁰¹ For example, the district court in Colorado found that the agency's failure to quantify the costs of GHG emissions was arbitrary and capricious where it had quantified the benefits and where the Social Cost of Carbon protocol was an available tool to measure the costs. *High Country Conservation Advoc. v. U.S. Forest Service*, 52 F. Supp. 3d 1174, 1192 (D. Colo. 2014); *see also California v. Bernhardt*, No. 4:18-CV-05712-YGR, 2020 WL 4001480, at *36 (N.D. Cal. July 15, 2020) ("It is arbitrary for an agency to quantify an action's benefits while ignoring its costs where tools exist to calculate those costs."); *Montana Env'tl.*, 274 F. Supp. 3d at 1098 (vacating permit decision and remanding matter to the agency where agency quantified the benefits of an action while failing to quantify the costs associated with GHG emissions). The court in *Bernhardt* explained that the agency "cannot ignore scientifically robust methods that exist to assess the actual effects of GHG emissions by again insisting they are too speculative or not 'reasonably foreseeable.'" *Bernhardt*, 2020 WL 4001480, at *36 (citing *NHTSA*, 538 F.3d at 1200 (listing a range of values for carbon emissions reductions, and noting that it "is certainly not zero"))).

Petitioners urged LDEQ to employ the Social Cost of Carbon protocol²⁰² to determine the impact of Formosa Plastics' GHGs on the environment, explaining that it is a federal agency-created tool used to measure in dollars the long-term damage per ton of carbon based on generally accepted research methods and years of peer-reviewed scientific and economic studies.²⁰³ "The Protocol is used to monetize damages associated with an incremental increase in carbon emissions in a given year."²⁰⁴ *Montana Env'tl.*, 274 F. Supp. 3d at 1095. It is intended to capture various damages associated with climate disruption, including changes in net agricultural productivity, human health, property damages, and the value of ecosystem services, all of which

²⁰¹ R. Vol. 34, p. 8458, EDMS 11998452, LDEQ Basis for Decision, p. 22.

²⁰² The most common greenhouse gas is carbon dioxide, which is why this method is called the social cost of carbon. The bulk of Formosa Plastics GHGs would be carbon dioxide.

²⁰³ R. Vol. 29, p. 7098, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, Attach. H, p. 3.

²⁰⁴ *See* R. Vol. 29, p. 7098, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, Attach. H, p. 3 (citing U.S. EPA, "EPA Fact Sheet: Social Cost of Carbon" at 1 (Dec. 2016), https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf).

climate change can degrade.²⁰⁵ As such, the Social Cost of Carbon protocol includes not only socioeconomic harm but also harm to the environment.

Instead of using this scientifically based, peer-reviewed method for analyzing the impact of Formosa's GHG emissions, or any method, LDEQ asserts that it "is not required [under state or federal regulation] to consider the social cost of carbon".²⁰⁶ But again, LDEQ does not consider the costs at all. LDEQ further justifies its failure to consider the social cost of carbon because "the permits require BACT for GHG emissions from the [Chemical] Complex."²⁰⁷ LDEQ ignores its public trustee duty by defaulting entirely to the technology requirements of state and federal permitting programs. Indeed, if regulations covered everything that the agency had to consider, then there would be no need for the public trustee duty. LDEQ "cannot assume that its duty is merely to adhere to its own regulations rather than to the constitutional and statutory mandates." *Matter of Dravo Basic Materials Co., Inc.*, 604 So. 2d 630, 640 (La. Ct. App. 1992) (citing *Save Ourselves*, 452 So. 2d at 1160 ("[I]t appears that the agency may have erred by assuming that its duty was to adhere only to its own regulations rather than to the constitutional and statutory mandates.")). Rather, "[t]he agency has a duty to see that the environment will be protected to the fullest extent possible consistent with the health, safety and welfare of the people." *Id.*

Even though LDEQ has determined that the permits require BACT for GHG emissions,²⁰⁸ the Chemical Complex will still emit enormous amounts of GHGs, which will have significant social costs that LDEQ must balance. That is, the application of regulatory emissions controls or standards does not excuse LDEQ from conducting this balancing under its public trustee duty. *Id.* at 1160; *see also Montana Env'tl.*, 274 F. Supp. 3d at 1095 (rejecting agency's

²⁰⁵ R. Vol. 29, p. 7098, EDMS 11817927, Petitioners' Aug. 2019 Comments, Attach. H, p. 3 (citing Interagency Working Group on Social Cost of Carbon, "Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866" (Feb. 2010), https://www.epa.gov/sites/production/files/2016-12/documents/scc_tsd_2010.pdf).

²⁰⁶ R. Vol. 35, pp. 8534-8535, EDMS 11998452, LDEQ Basis for Decision, Resp. to Comment 72.

²⁰⁷ R. Vol. 34, p. 8457, EDMS 11998452, LDEQ Basis for Decision, p. 21.

²⁰⁸ The permits do not reflect BACT for GHG, let alone do they avoid impacts to the "maximum extent possible" as the public trustee duty requires. LDEQ failed to require enforceable measures. LDEQ also failed to require Formosa Plastics to obtain its energy from renewable or low carbon sources. LDEQ Second Unopposed Motion to Supplement the Administrative Record, Oct. 29, 2020, Ex. A, No. 3 (Public Comments: by . . . "multiple environmental groups, dated 8/12/2019"), EDMS 11817937, Environmental Integrity Project Aug. 12, 2019 Comments, pdf. 34-36; *id.* at Ex. A, No. 2 (Supplemental Public Comments: by Earthjustice on behalf of RISE St. James, et al., pp. 1-4, dated 8/28/2019) (adopting Environmental Integrity Project comments), EDMS 11841221, p. 2, pdf. 3.

argument that it need not quantify the effects of GHGs because “[t]echnologies and emission control systems are reducing emissions and increased regulation would likely reduce emissions in the future”). Courts have held that agencies must consider a project’s impacts even when the project will comply with all applicable environmental regulations. *See Calvert Cliffs’ Coordinating Comm. v. U. S. Atomic Energy Comm’n*, 449 F.2d 1109, 1122-1123 (D.C. Cir. 1971) (holding that compliance with environmental regulations does not relieve an agency of its duty to consider the environmental impacts of a project, because these regulations “simply determine whether those costs exceed an allowable amount. Their certification does not mean that they found no environmental damage whatever”).

3. LDEQ’s conclusion that GHG emissions will remain the same regardless of whether Formosa Plastics builds its facility in St. James lacks record support and is arbitrary and capricious.

LDEQ rejected the “no build” alternative, claiming that constructing the Chemical Complex in St. James Parish will “have no more impact on Louisiana (relative to GHGs) than if the facility was constructed elsewhere” because “GHGs become well mixed throughout the global atmosphere” and “tend to be relatively uniform around the world.”²⁰⁹ But LDEQ’s assumption that Formosa Plastics would build its planned Chemical Complex outside of Louisiana if it did not build in St. James is not based on evidence in the record. Indeed, every site that Formosa Plastics listed in its alternative sites analysis is in Louisiana.²¹⁰ Furthermore, LDEQ’s assumption arbitrarily assumes that the facility would use the same technologies and same feedstock if built elsewhere. *See WildEarth Guardians v. U.S. Bureau of Land Mgmt.*, 870 F.3d 1222, 1234-35 (10th Cir. 2017) (Where agency assumed without support that same amount of coal would be mined elsewhere if it did not lease land in question, court found assumption is arbitrary and capricious and does not “provide ‘information sufficient to permit a reasoned choice’ between the preferred alternative and no action alternative.”).

4. LDEQ’s conclusion that Formosa Plastic’s Chemical Complex could displace higher greenhouse gas-emitting facilities is unsupported and is arbitrary and capricious.

²⁰⁹ R. Vol. 34, 8457, EDMS 11998452, LDEQ Basis for Decision, p. 22.

²¹⁰ *See* R. Vol. 14, pp. 3464-3468, EDMS 11230529, Formosa’s July 19, 2018 EAS, pdf. 37-41.

Without any support, LDEQ asserts the Chemical Complex will consume less natural gas than plants that produce similar products elsewhere.²¹¹ LDEQ further postulates that “should any product produced at the [Chemical] Complex displace its production elsewhere, net GHG emissions may actually decrease.”²¹² This theory requires a series of assumptions, none of which the record supports.²¹³ There is no evidence in the record to support LDEQ’s assertion the Chemical Complex is more energy efficient or would result in fewer GHG emissions than facilities that produce the same products—whether in the United States, Asia, or anywhere. Further, it is completely speculative that the Chemical Complex could displace production elsewhere; nothing in the record supports this notion. Regardless, LDEQ must consider the GHG impacts on climate change. *See Sierra Club v. Fed. Energy Regul. Comm’n*, 867 F.3d 1357, 1374-75 (D.C. Cir. 2017) (finding that FERC is not “excused from making emissions [greenhouse gas] estimates just because the emissions in question might be partially offset by reductions elsewhere”); *see also Montana Env’tl.*, 274 F. Supp. 3d at 1094-99, 1104 (rejecting as “illogical” agency’s conclusion that its action “would cause no net greenhouse-gas impacts” under no action alternative because different coal would be burned its place).

5. LDEQ’s assertion that GHG emissions do not harm human health directly does not excuse the agency from considering the impacts of the emissions.

LDEQ’s characterization that “direct exposure to GHGs at current or projected ambient levels appear to have no known adverse effects on human health,”²¹⁴ is irrelevant and does not excuse its failure to consider the climate impacts associated with Formosa Plastics’ GHG emissions. Not only does the public trustee duty require consideration of public health, which GHGs do directly impact, it extends beyond human health to “economic, social and other factors.” *Save Ourselves*, 452 So. 2d at 1159. Given this duty, LDEQ’s excuse is irrelevant.

C. The Court should vacate LDEQ’s Decision and remand the matter to LDEQ to consider the climate impacts.

The Louisiana Supreme Court explained that while “the constitution does not establish environmental protection as an exclusive goal” it does “require[] a balancing process in which

²¹¹ R. Vol. 34, p. 8458, EDMS 11998452, LDEQ Basis for Decision, p. 22.

²¹² R. Vol. 34, p. 8458, EDMS 11998452, LDEQ Basis for Decision, p. 22.

²¹³ Formosa Plastics rejected naphtha as an option because it is more costly. R. Vol. 14, p. 3463, EDMS 11230529, Formosa EAS, July 19, 2018, p. 35.

²¹⁴ R. Vol. 34, p. 8458, EDMS 11998452, LDEQ Basis for Decision, p. 22 (citing *Regulating Greenhouse Gas Emissions Under the Clean Air Act*, 73 FR 44354-01 (proposed July 30, 2008)).

environmental costs and benefits must be given full and careful consideration along with economic, social and other factors.” *Save Ourselves*, 452 So. 2d at 1157 (emphasis added).

Because LDEQ failed to determine the impacts of Formosa Plastic’s GHG emissions, it consequently failed to balance those costs against any benefits of the project. The Supreme Court instructed that “if the decision was reached procedurally, without individualized consideration and balancing of environmental factors conducted fairly and in good faith, it is the court’s responsibility to reverse.” *Id.* at 1159; *see also Matter of Am. Waste*, 633 So.2d at 195 (remanding matter to LDEQ since it could not be determined from the record whether the balancing the benefits of the proposed project against the risk to the environment was conducted properly); *see also Montana Env’tl.*, 274 F. Supp. 3d at 1074, (determining that agency’s error was serious and warranted vacatur because “it placed its thumb on the scale by evaluating the economic benefits of the [project] without analyzing potential concomitant costs to the human environment” and further stating that the “error lies at the heart of NEPA’s requirement that agencies make informed decisions”). The court, therefore, should vacate LDEQ’s Decision and remand the matter with instructions requiring the LDEQ to evaluate the climate impacts of the Chemical Complex.

VI. LDEQ violated its public trust duty by failing to include any environmental impacts in its cost-benefit analysis.

The Louisiana Constitution requires that LDEQ fully and carefully balance “environmental costs and benefits,” giving consideration to the “economic, social and other factors” of its decisions. *Save Ourselves*, 452 So. 2d at 1157. To perform this analysis, LDEQ must determine whether “the environmental impact costs balanced against the social and economic benefits of the project demonstrates that the latter outweighs the former.” *In re General Permit*, 70 So. 3d at 104. As the First Circuit explained, while “[h]arm to the environment cannot always be quantified as easily as the economic benefits derived from taxes and salaries,” LDEQ must conduct a balancing “to insure protection of the environment without too high a cost to the economy and our way of life.” *Matter of CECOS*, 574 So. 2d at 392. Importantly, “[L]DEQ’s inquiry is not limited to the [pollutant],” but must focus “on the entire activity.” *Matter of Dravo Basic Materials*, 604 So. 2d at 635. “Simple logic, fairness, and the premises of a cost-benefit analysis . . . demand that a cost-benefit analysis be carried out

objectively.” *Sierra Club v. Sigler*, 695 F.2d 957, 979 (5th Cir. 1983). But LDEQ failed to put a single real or potential harm from the Chemical Complex on the balancing scale. LDEQ’s biased effort was not the true cost-benefit analysis the Constitution requires, and, as a result, LDEQ arbitrarily and capriciously determined that the benefits would outweigh the harms from the Chemical Complex.

1. LDEQ failed its public trustee duty by assuming that regulatory compliance would eliminate all adverse air impacts, ignoring all evidence to the contrary.

While LDEQ trumpeted the purported economic and social benefits of the Chemical Complex, the agency zeroed out all environmental impact costs, pointing to the Chemical Complex’s purported compliance with regulatory standards to support its claim that “the permits do not allow for air quality impacts that could adversely affect human health or the environment.”²¹⁵ Not only does the record fail to support this conclusion by a preponderance of the evidence—Formosa Plastics’ own Air Quality Analysis showed the Chemical Complex would cause or contribute to violations of the NAAQS and increments, scattered throughout St. James Parish, *see supra* Legal Framework I—but LDEQ cannot in any case assume that purported compliance with air quality standards and emission controls erases all environmental impacts. As explained in *Calvert Cliffs*’, the foundational case relied upon by the Louisiana Supreme Court when first detailing LDEQ’s public trustee duty, *See Save Ourselves*, 452 So. 2d at 1157, compliance with environmental standards does not ameliorate an agency’s duty to consider impacts of pollutants regulated under those standards. *See Calvert Cliffs’ Coordinating Comm. v. U. S. Atomic Energy Comm’n*, 449 F.2d 1109, 1122–23 (D.C. Cir. 1971) (recognizing that “there might be significant environmental damage . . . but not quite enough to violate applicable . . . standards”); *see also WildEarth Guardians v. U.S Office of Surface Mining, Reclamation & Enf’t*, 104 F. Supp. 3d 1208, 1227–28 (D. Colo. 2015) (order vacated, appeal dismissed on mootness grounds) (finding compliance with the NAAQS does not excuse an agency from analyzing air quality environmental impacts because a project may comply with Clean Air Act standards but still impact the environment); *Friends of Buckingham*, 947 F.3d at

²¹⁵ R. Vol. 34, p. 8448, EDMS 11998452, LDEQ Basis for Decision, p. 12. These findings are incorporated by reference into LDEQ’s cost-benefit analysis, which does not independently analyze environmental impacts, but merely states that “other media are discussed in Sections VI and VII above.”

86 (vacating and remanding decision where agency “failed to individually consider the potential degree of injury to the local population independent of NAAQS and state emission standards”). Furthermore, the Clean Air Act does not require EPA when setting the NAAQS to “definitively identify pollutant levels below which risks to public health are negligible.” *American Trucking Ass’n v. EPA*, 283 F.3d 355, 369-70 (D.C. Cir. 2002). When it makes NAAQS determinations, “EPA does not purport to set the NAAQS at a level which would entirely preclude negative health outcomes.” *North Carolina v. Tenn. Valley Auth.*, 593 F. Supp. 2d 812, 822 n.6 (W.D.N.C. 2009), *rev’d on other grounds*, 615 F.3d 291 (4th Cir. 2010).

By relying solely on its finding that the Chemical Complex will comply with applicable standards and emission controls, LDEQ violated its public trustee duty to weigh the resulting environmental impacts of allowing over 800 tpy of toxic air pollutants and more than 6000 tpy of criteria pollutants.

2. The record establishes environmental impacts costs that LDEQ entirely failed to consider.

LDEQ failed to consider many of the environmental impacts and social costs associated with its Decision, as discussed in this brief. For instance, LDEQ failed to recognize that Formosa Plastics’ ethylene oxide emissions have the potential to create a cancer hotspot, where modeled emissions show concentrations that exceed established cancer risk thresholds in a residential area of District 5. *See supra* Argument II.A.1. Similarly, LDEQ failed to recognize that the ethylene oxide emissions exceed the cancer risk thresholds in Union by arbitrarily determining that the community stops at residential structures. *See supra* Argument II.A.1. LDEQ also gave zero weight to the environmental justice and social costs that the Chemical Complex will force Black communities in the area to bear. *See supra* Argument IV. In addition, LDEQ failed to weigh the impacts of Formosa Plastics’ PM_{2.5} and NO_x emissions, which exceed NAAQS standards, *supra* Argument I.A, the cumulative impacts of the Chemical Complex’s 22 different toxic air pollutants that would double the amount of toxic pollutants authorized Parish-wide, *supra* Argument III.B., and the environmental impact costs associated with the 13.6 million tpy of GHG emissions that LDEQ has authorized Formosa Plastics to emit, *supra* Argument V. By omitting these impacts from its analysis, LDEQ placed its thumb on the scale in favor of the

project's benefits and failed to show that it had considered the full "gravity of the possible harm." *CECOS*, 574 So. 2d at 393.

LDEQ's failure to weigh, or in some cases even acknowledge, the full range of environmental harms resulting from its permit action, renders its conclusion that "the social and economic benefits of the proposed project will greatly outweigh its adverse environmental impacts"²¹⁶ arbitrary and capricious. "An arbitrary decision shows 'disregard of evidence or of the proper weight thereof' while a capricious decision 'has no substantial evidence to support it or the conclusion is contrary to substantiated competent evidence.'" *Carpenter v. State Dep't of Health & Hosps.*, 2005-1904 (La. App. 1 Cir. 9/20/06), 944 So.2d 604, 612 (citations omitted). For this reason, the Court should vacate LDEQ's decision and remand the matter to the agency instructing it to consider the environmental impacts that it failed to place on the balancing scale.

CONCLUSION

For all the foregoing reasons, Petitioners ask the Court to reverse LDEQ's January 6, 2020 final Decision granting the PSD Permit and 14 Title V /Part 70 Air Operating Permits, and vacate the permits.

Respectfully submitted this 5th day of November, 2020 by,



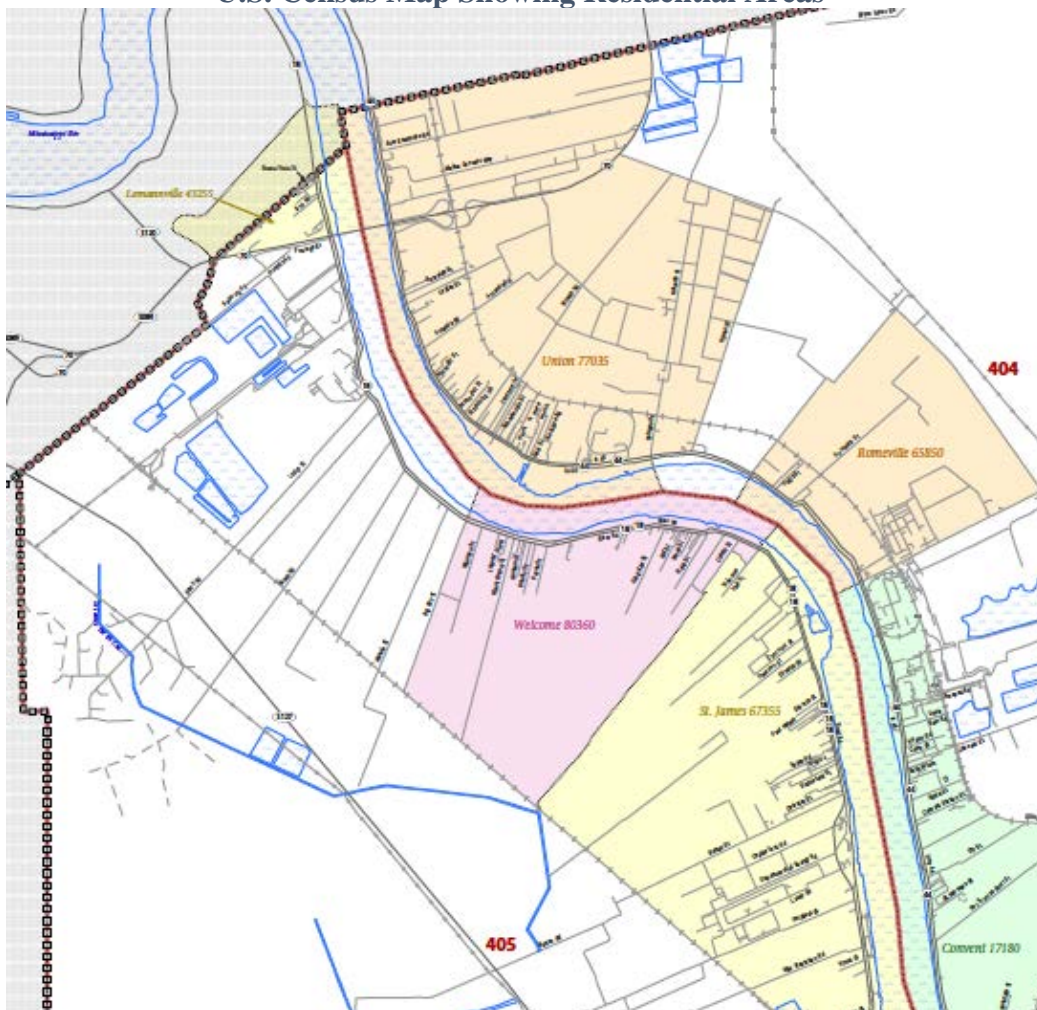
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²¹⁶ R. Vol. 34, p. 8437, EDMS 11998452, LDEQ Basis for Decision, p. 1; *see also id.* at 35, 43.

LDEQ Satellite Image Showing Formosa Site¹
Also showing Formosa's Modeled PM_{2.5} NAAQS 24-hour Violations (Black Dots)



U.S. Census Map Showing Residential Areas²



¹ R. Vol. 34, pp. 8440-8441, EDMS 11998452 LDEQ Basis for Decision, pp. 15–16.

² R. Vol. 29, p. 7131, EDMS 11819373, Petitioners' Aug. 12, 2019 Comments, Attach. L.

Formosa Plastics' Site Map - "Approximate Layout With Buffer Zones"¹

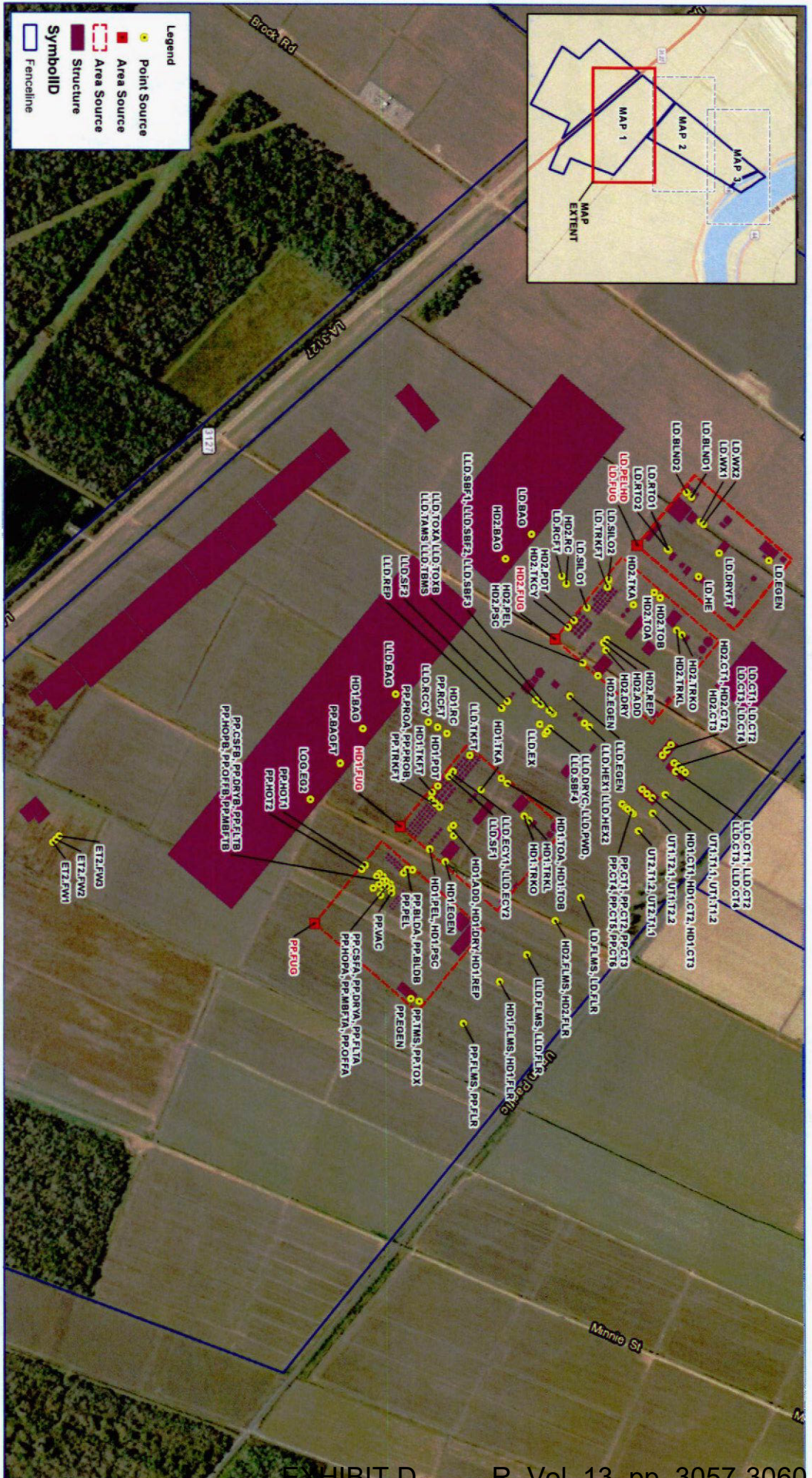


¹ R. Vol. 14, p. 3506, EDMS 11230529, Formosa Plastics' EAS, July 18, 2018, Ex. E, pdf. 80 (showing 300 foot buffer within the site between major emission sources and the fenceline).

Map of Communities in relation to
New & Existing Industrial Facilities in St. James Parish¹



¹ See R. Vol. 28, p. 6947, EDMS 11817927, Petitioners' Aug. 12, 2019 Comments, Attach. A, Kray Aff., Ex. 1.



Legend

- Point Source
- Area Source
- Structure
- Fenceline

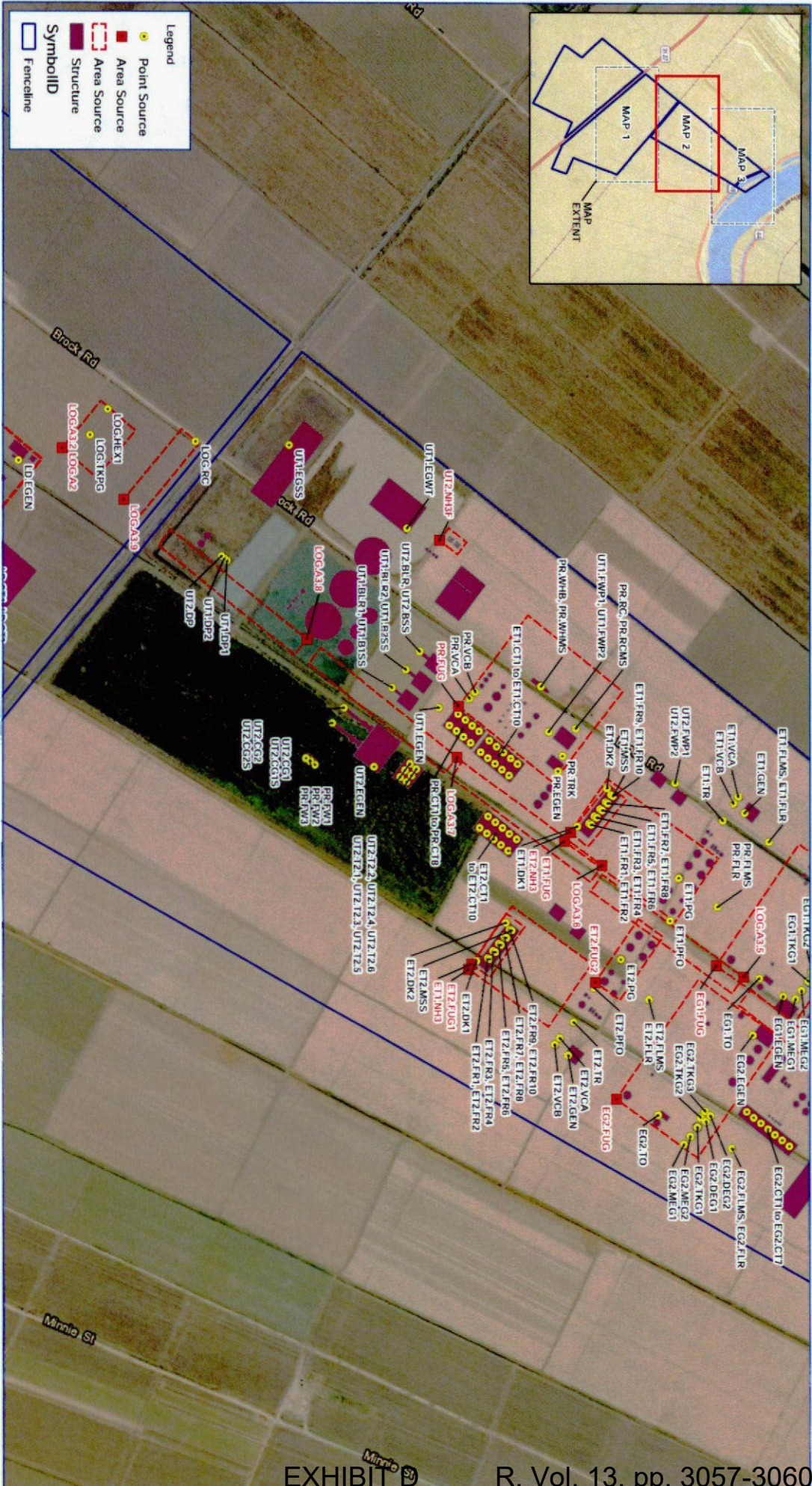
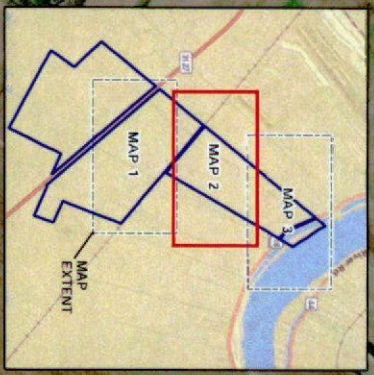
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Map Source:
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UTM Zone: 15

0 250 500 1,000 2,000
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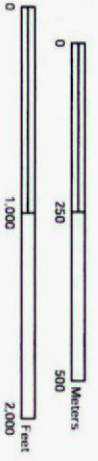
zephyr
A HOVISTA Equipment Company

Modeling Plot 157000007228 Model Center At River Road/Highway 103 (Baton Rouge, LA) - 157000007228
 Created By: J. Knowles
 St. James Parish, Louisiana
 FG LA LLC
 MAP 1 OF 3
 Reviewed By: S. Bhandari
 Project No.: 150057
 Date: 6/19/2018

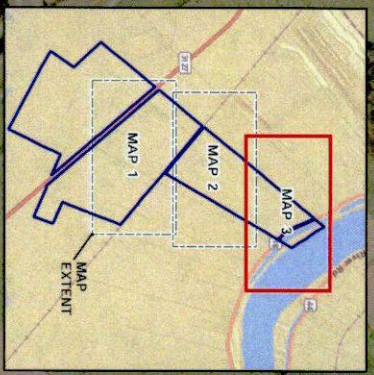


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- Point Source
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 - Fenceline

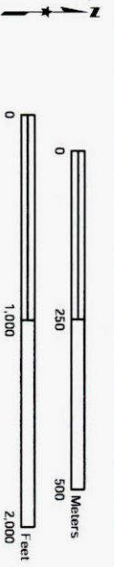
Map Sources:
 ESRI/World Imagery
 Streets BaseMaps
 Datum: NAD83
 UTM Zone 15



MODELING PLOT PLAN	
MAP 2 OF 3	
FG LA LLC	
St. James Parish, Louisiana	
Drafted By: J. Knowles	Reviewed By: S. Bhardwaj
Project No.: 150057	Date: 6/19/2018



- Legend**
- Point Source
 - Area Source
 - Area Source
 - Structure
 - SymbolID
 - FenceLine



MODELING PLOT PLAN	
MAP 3 OF 3	
FG LALLC	
St. James Parish, Louisiana	
Drawn by: J. Knowles	Reviewed by: S. Bhardwaj
Project No.: 150057	Date: 6/7/2018



Legend
 Downwash Structure
 Fenceline

<p>Map Sources: ESRI-World Imagery Streets BaseMap Datum: NAD83 UTM Zone 15</p>	<p>0 250 500 Meters 0 1,000 2,000 Feet</p>		<p>MODELING PLOT PLAN DOWNWASH STRUCTURES FG LA LLC St. James Parish, Louisiana R. Vol. 13, pp. 3057-3060 Date: 02/10/18</p>
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EXHIBIT D

Table 1¹

Criteria Pollutants	Emissions (tpy)
Particular matter 10 (PM ₁₀)	363.86
Particular matter 2.5 (PM _{2.5})	339.81
Sulfur dioxide (SO ₂)	82.90
Nitrogen oxides (NO _x)	1242.53
Carbon monoxide (CO)	2768.93
Volatile organic compounds (VOC)	1667.89
Carbon dioxide equivalents (CO _{2e})	13,628,091

Table 2²

Toxic Air Pollutant	Emissions (tpy)
1,3-Butadiene	23.89
Acetaldehyde	17.78
Ammonia	436.75
Benzene	36.58
Cumene	1.13
Dibutyl phthalate	0.01
Dimethyl sulfate	0.08
Ethyl benzene	0.46
Ethylene glycol	44.76
Ethylene oxide	7.70
Formaldehyde	8.90
Hydrogen sulfide	0.13
Methanol	0.04
Naphthalene	0.16
n-Hexane	146.72
Phenol	0.11
Propionaldehyde	0.48
Sulfuric acid	6.02
Styrene	0.82
Toluene	8.41
Vinyl acetate	59.84
Xylene	2.18
Total	802.95

¹ R. Vol. 34, pp. 8440-8441, EDMS 11998452, LDEQ Basis for Decision, pp. 4-5.

² *Id.*

LDEQ's Map of Formosa's Modeled PM_{2.5} NAAQS 24-hour Violations (shown as Black Dots)¹



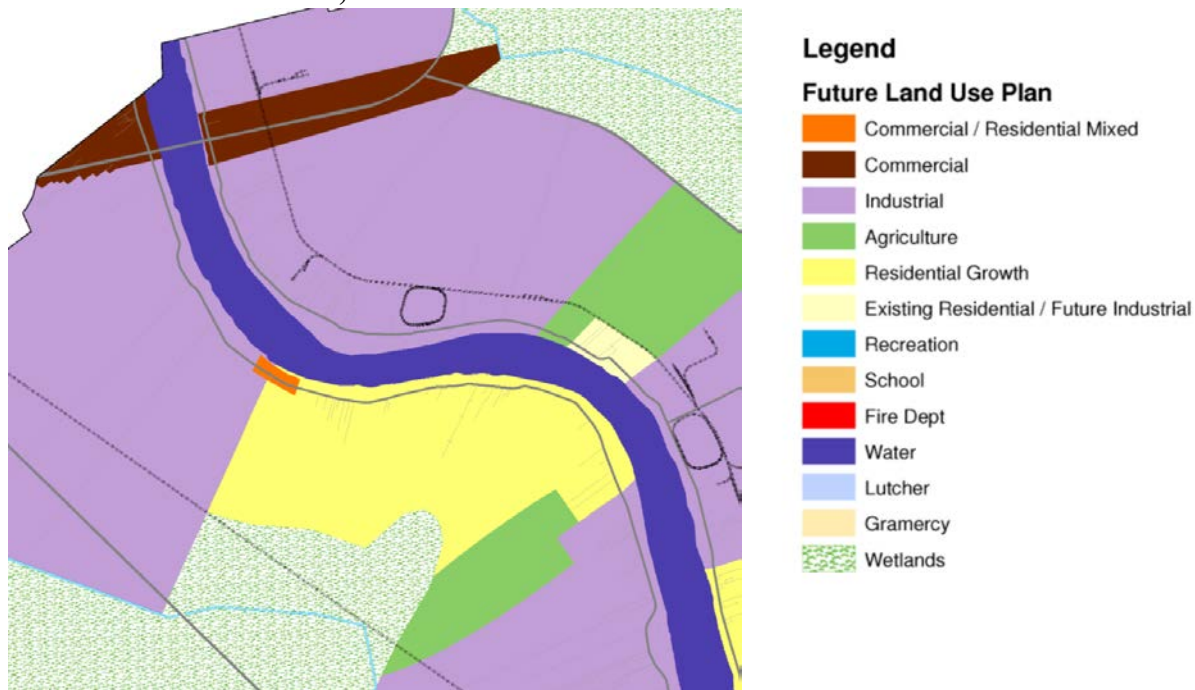
Map of Communities / New & Existing Industrial Facilities in St. James Parish²



¹ R. Vol. 34, pp. 8440-8441, EDMS 11998452 LDEQ Basis for Decision, pp. 15–16.

² R. Vol. 28, p. 6947, EDMS 11819373, Petitioners' Aug. 12, 2019 Comments, Attach A., Ex. 1.

Land Use Plan, Section 82-25 of St. James Parish Code of Ordinances¹



LDEQ Satellite Image Showing Formosa Site²



Formosa’s Ethylene Oxide Contour Map³



A comparison of the Land Use Plan map (top) with the satellite image (bottom left) shows that the area downriver of Formosa’s site is designated as “Residential Growth” (yellow area of Land Use Plan map). Formosa’s Ethylene Oxide Contour Map (bottom right) shows that modeled ethylene oxide concentrations that exceed 0.02 µg/m extend downriver of the site.

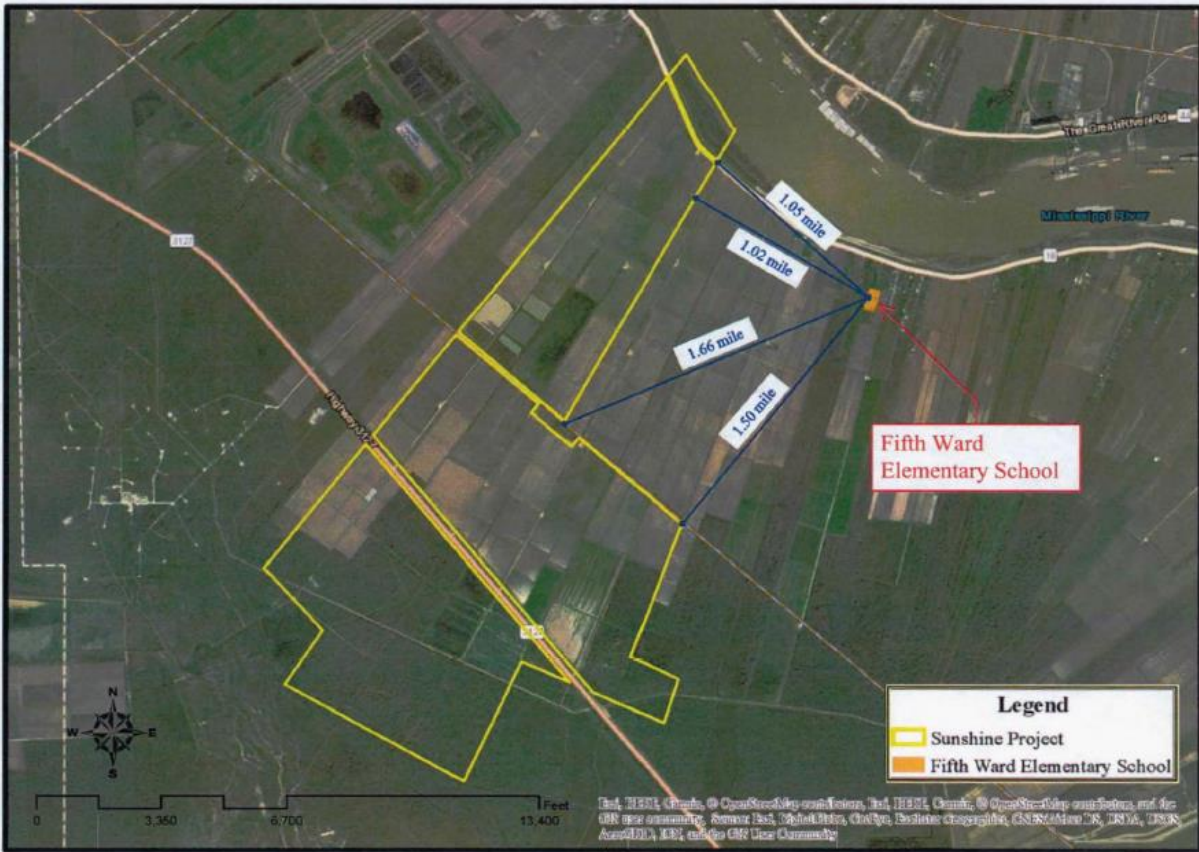
¹ This is an image of the Land Use Map printed in Sec. 82-25 of the St. James Parish Code of Ordinances, which is available on the St. James Parish Official Website, <https://www.stjamesla.com/> under Government > Code of Ordinances > Chapter 82 Planning and also directly at https://library.municode.com/la/st._james_parish_council/codes/code_of_ordinances?nodeId=PTIICOOR_CH82PL.

² R. Vol. 34, pp. 8440-8441, EDMS 11998452, LDEQ Basis for Decision, p. 15.

³ R. Vol. 19, p. 4766, EDMS 11457119, Formosa Supplemental EAS, Jan. 7, 2019, Ex. P-1.

Formosa's Map Showing Location to School¹

Distance to Fifth Ward Elementary School



¹ R. Vol. 14, p. 3505, EDMS 11230529, Formosa Plastics' EAS, July 19, 2018, Ex. D, pdf. 78.

19TH JUDICIAL DISTRICT COURT
PARISH OF EAST BATON ROUGE
STATE OF LOUISIANA

RISE ST. JAMES, LOUISIANA BUCKET	*	
BRIGADE, SIERRA CLUB, CENTER FOR	*	
BIOLOGICAL DIVERSITY, HEALTHY	*	Case No.: 694,029
GULF, EARTHWORKS, and NO WASTE	*	
LOUISIANA,	*	Section: 27
Petitioners,	*	
v.	*	Judge: Trudy White
	*	
LOUISIANA DEPARTMENT OF	*	
ENVIRONMENTAL QUALITY,	*	
Defendant.	*	

CERTIFICATE OF SERVICE

The undersigned counsel for PETITIONERS hereby certifies that on this 5th day of November, 2020, a true and correct copy of the **PETITIONERS' BRIEF IN SUPPORT OF THEIR PETITION FOR JUDICIAL REVIEW** was served by email in accordance with La. Code of Civ. Pro. Art. 1313.A(4) to all counsel of record.



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