

Country /City Reserve, Louisiana

University / School Tulane University School of Architecture

Academic year 2022-2023

Title of the project Exploited to Empowered: Methods for Reparations and Resilience in a Post-Petrochemical Transition

Authors Chelsea Kilgore '24

TECHNICAL DOSSIER

Title of the project Exploited to Empowered: Methods for Reparations and Resilience in a Post-Petrochemical Transition
Authors Chelsea Kilgore '24
Title of the course Gulf Design Research Studio Pilot: Climate Futures
Academic year 2022-2023
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Department / Section / Program of belonging Landscape Architecture Department / School of Architecture
University / School Tulane University School of Architecture



Written statement, short description of the project in English, no more than 250 words

Global shifts to renewable energy sources, the UN Net Zero Coalition, and decreasing demand for oil and gas create a pivotal moment for the petrochemical industry and the communities it impacts. This moment presents both an opportunity to halt patterns of exploitative land use and disproportionate industrial production, and a risk of further marginalizing disadvantaged communities if no steps are taken to protect and equip the vulnerable. This visioning project recognizes the need for a managed phase-out of the fossil fuel and petrochemical industry in the Gulf South region to ensure an equitable transition for communities that have been exploited in favor of global-scale production and consumption. The project envisions a framework that creates site-specific and stakeholder-driven methods for petrochemical facilities and their adjacent communities to transform over time in a global transition from fossil fuels to renewables. This framework aims to deconstruct spatial patterns of industrial dominance, focus on collective flourishing, and put land use decisions in the hands of the community. It also prepares resiliency strategies against future climate and economic risks. Strategies for generating replacement local economies, remediating and regenerating polluted environments, and empowering community ownership are proposed, with emphasis on a transition that invests in people and place development led by the community and funded by declining petrochemical industries through a policy-driven community land trust.

For further information

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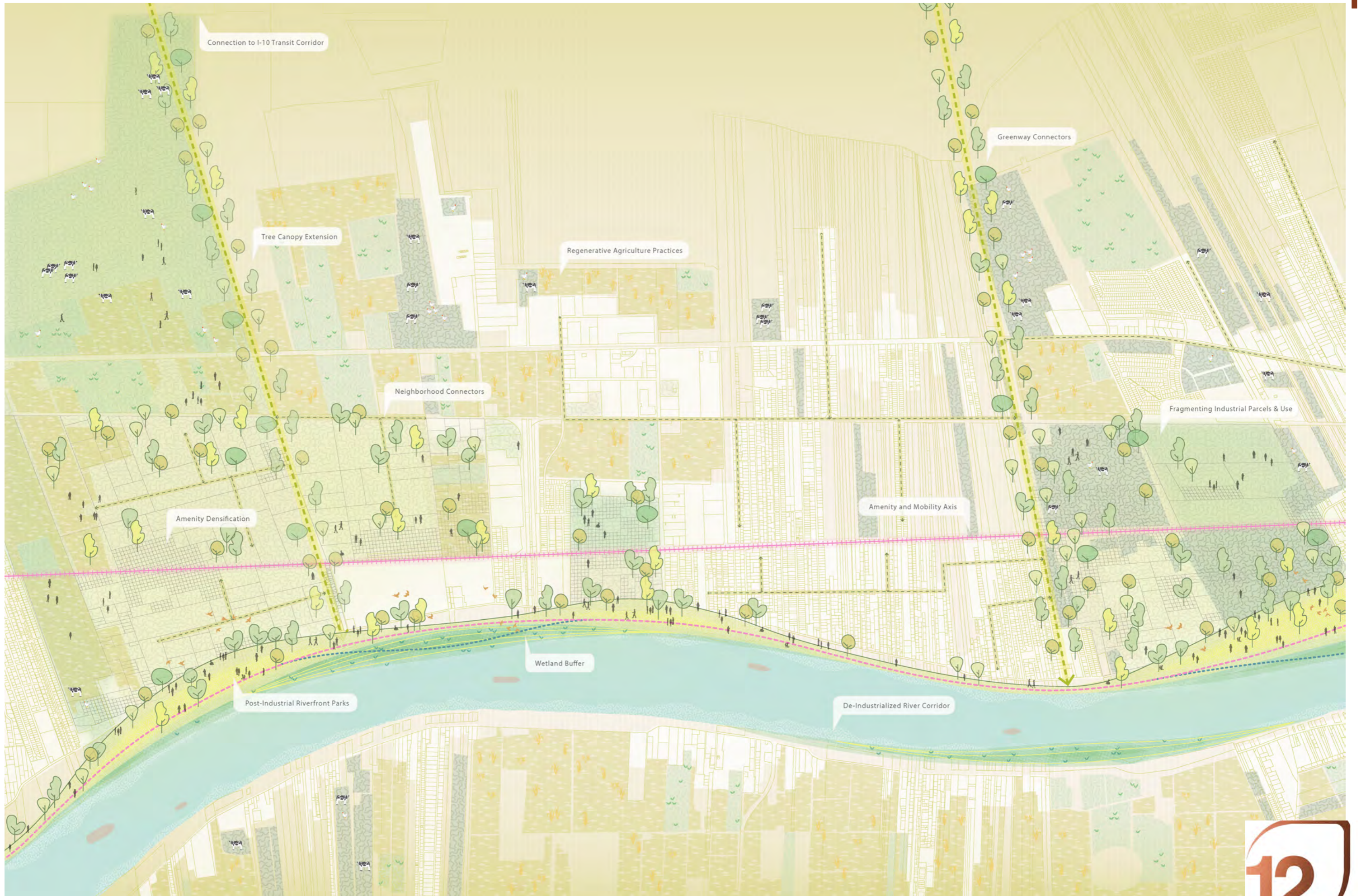
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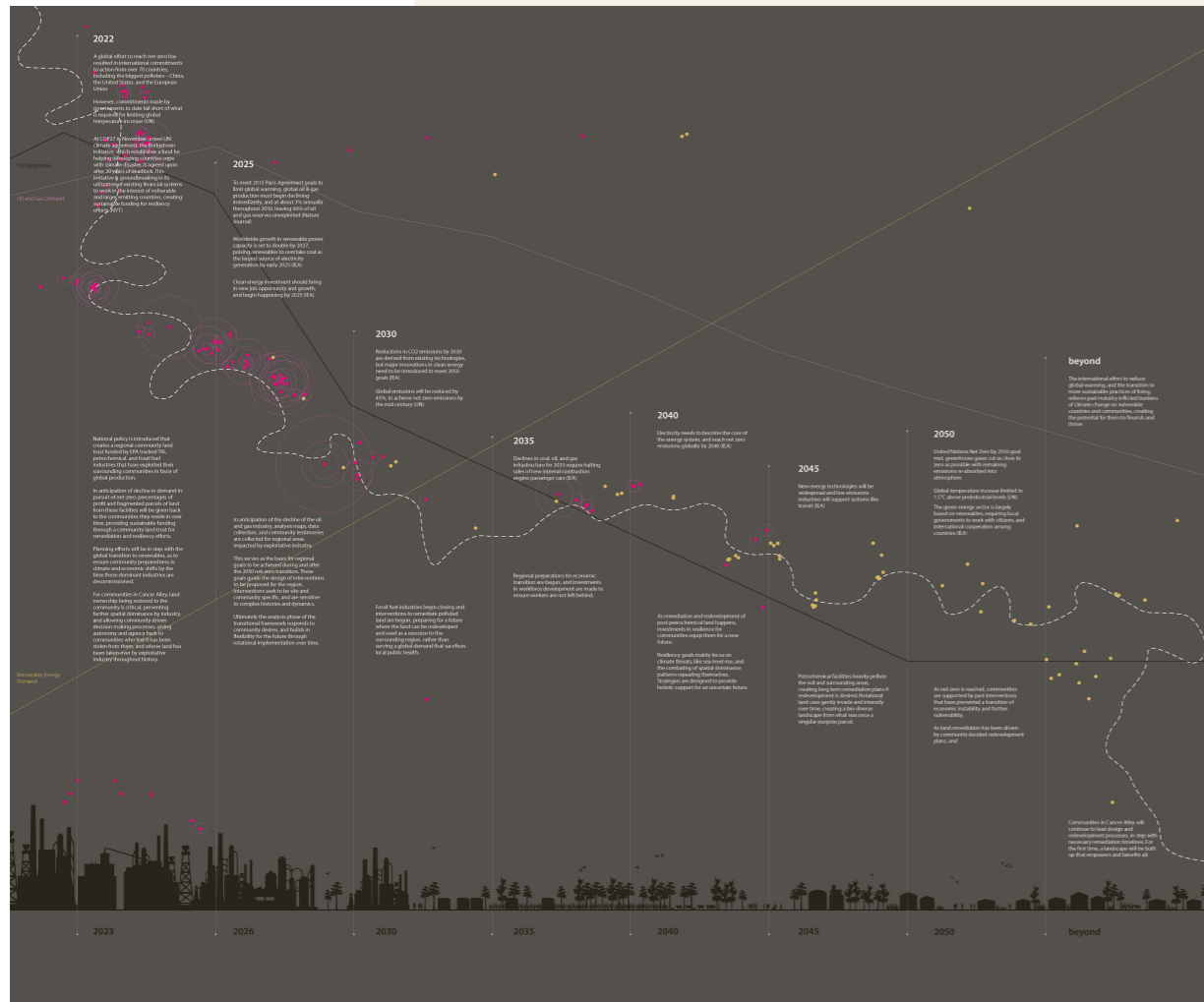
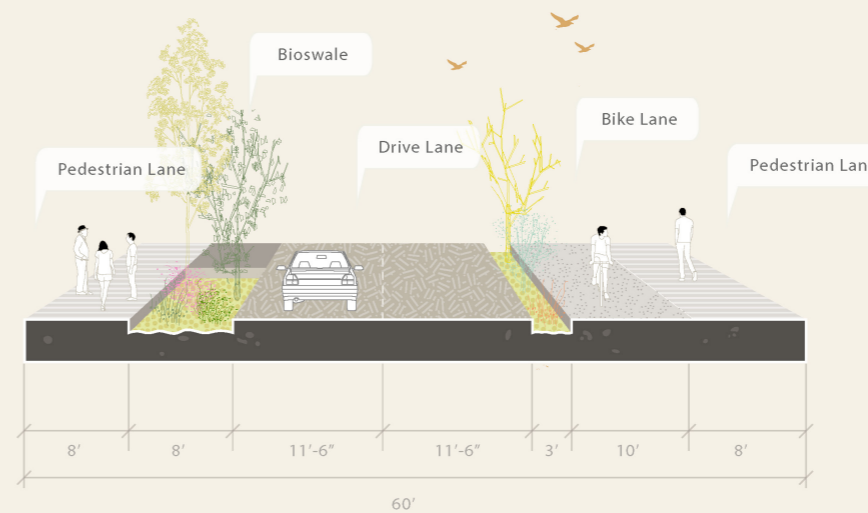
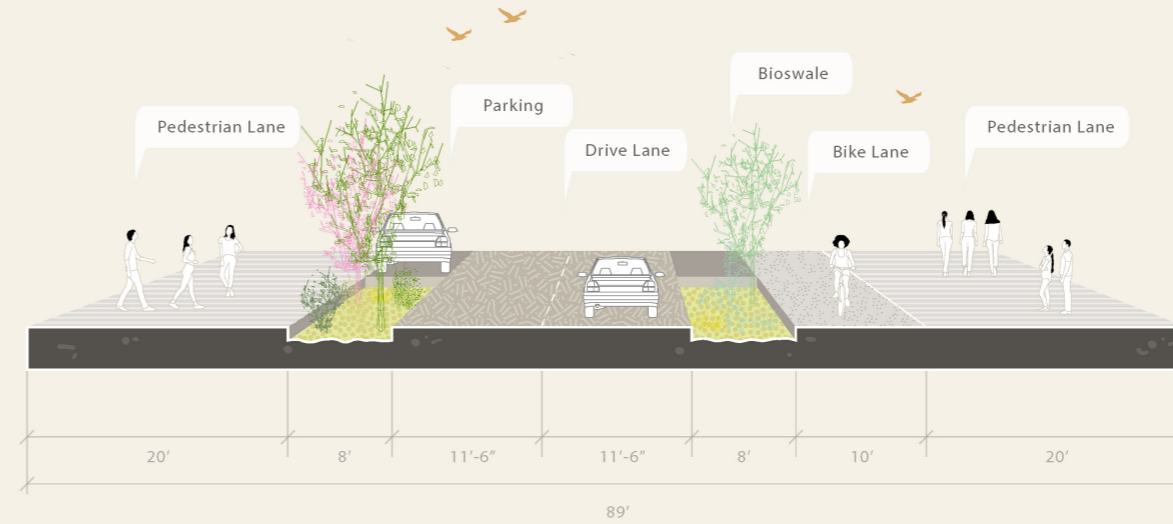
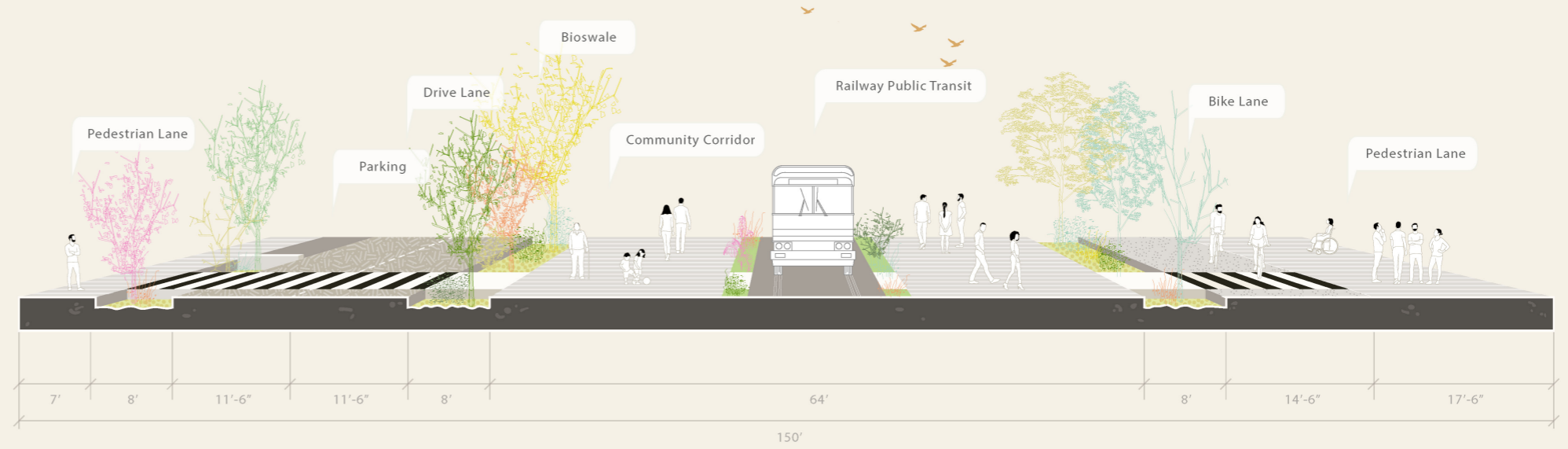
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SCHOOL PRIZE





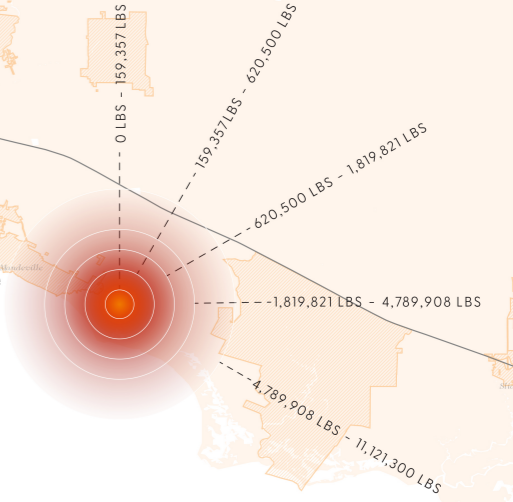
THE PETROCHEMICAL CORRIDOR

The industrial corridor between Baton Rouge and New Orleans, also known as cancer alley, houses roughly 150 chemical plants along an 85 mile stretch of the Mississippi River, echoing spatial patterns of plantation era Louisiana. The area is known for toxic industrial pollution, including emissions of carcinogens, and chemicals known to cause illnesses among surrounding communities. The Environmental Protection Agency's (EPA) Toxic Release Inventory (TRI) tracks the management of certain toxic chemicals that may pose a threat to human health and the environment. In the year 2020, TRI ranked Louisiana as 4th out of 56 states / territories based on total releases per square mile. Illustrated are different chemicals emitted along the corridor in proportion to the amount of emissions per pound, as reported to the EPA in 2020.

LEGEND

- Freeway
- Parishes
- Cities

Total Industrial Facility Chemical Release for 2020 via EPA TRI Inventory



Chemicals Emitted from EPA Regulated Facilities

- Not Carcinogenic
- Carcinogenic

BATON ROUGE

RUBICON LLC Geismar, LA

Rubicon LLC is a chemical plant in Ascension Parish that produces Polyurethane chemicals that are used to produce polyurethane, a polymer used in a diverse range of consumer and industrial applications. In the year 2020, over 4,207,006 lbs of chemicals were emitted from Rubicon through the air, water, and land on site, as well as taken off site to be disposed of.

43 Chemicals were released including the known carcinogens: 1,4-Dichlorobenzene, Formaldehyde, 4-Amino-2-Methylphenol, Nitrobenzene, Benzene, Ethylene oxide, Nickel compounds, Propylene oxide, and Diavin and diavin-like compounds.

DUPONT PONTCHARTRAIN WORKS Reserve, LA

Dupont Pontchartrain Chemicals Solutions Enterprise operates chemical processes that produce aromatic amines, used to make formal fiber in industrial dyes, as an antioxidant, and for the hardening of paint and other surface coating. Dupont sold to Denka in 2015, but is still listed as an EPA regulated facility with differing emissions from Denka. In the year 2020, over 745,276 lbs of chemicals were emitted from Dupont through the air, water, and land on site, as well as taken off site to be disposed of.

24 Chemicals were released including the known carcinogens: 4-Aminoazobenzene, Benzene, Creosole, 4-Aminobiphenyl, Polycyclic aromatic compounds, and Nickel.

CF INDUSTRIES NITROGEN LLC Donaldsonville, LA

CF Industries Donaldsonville Complex is the world's largest ammonia production facility, and houses 5 ammonia plants, five urea plants, four nitric acid plants, three urea ammoniation plants and a diesel exhaust fluid plant. In addition to ammonia, they produce Granular Urea, Urea Ammonium Nitrate, and Diesel Exhaust Fluid. In 2020, CF Industries emitted over 10,242,303 lbs of chemicals.

9 Chemicals were released including the known carcinogens: Nickel And Nickel Compounds, and Formaldehyde.

DENKA PERFORMANCE ELASTOMER LLC Reserve, LA

Denka operates in a former Dupont facility in Lafourche and produces the chemical chloroprene which is used in the manufacture of neoprene synthetic rubber. Neoprene is used in a wide variety of products such as perfumes and agricultural gloves, and Denka is the only plant in the US that produces Neoprene. In the year 2020, over 17,000 lbs of chemicals were emitted from Denka through the air, water, and land on site, as well as taken off site to be disposed of.

10 Chemicals were released including the known carcinogens: 1,3-Butadiene and Chloroprene.

BAYER CROP SCIENCE LP Luling, LA

Bayer is a German based company that produces crop protection products, focusing on weeds, pest and disease control, and crop production. Their Roundup weed killer was flagged to the EPA in 2022 for its inclusion of the ingredient glyphosate, which is thought to cause cancer and threaten endangered species, though it was reauthorized by the EPA in 2020. Over 17,855,667 lbs of chemicals were emitted from Bayer in 2020.

17 Chemicals were released including the known carcinogens: Diavin and diavin-like compounds, Cobalt, Nitroethane, Bis(2-chloroethyl) Ether, Copper, Nickel.

NEW ORLEANS

