COMMENTS OF RISE ST. JAMES, EARTH ISLAND INSTITUTE, AND WE ACT FOR ENVIRONMENTAL JUSTICE SUBMITTED TO THE U.S. ENVIRONMENTAL PROTECTION AGENCY

Interim Framework for Advancing Consideration of Cumulative Impacts

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By

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Commenters

RISE St. James, Earth Island Institute, and WE ACT for Environmental Justice, through the Georgetown Environmental Law & Justice Clinic,[1] present the following Comment in response to the request for comments issued by the U.S. Environmental Protection Agency (EPA) regarding its Interim Framework for Advancing Consideration of Cumulative Impacts (the Framework).[2] As set forth below, the Commenters strongly support this Framework and consideration of cumulative impacts throughout environmental decision-making.

I. Background: Environmental Injustice and Cumulative Impacts in Louisiana's Cancer Alley

The experiences of residents in St. James Parish, Louisiana, are emblematic of the urgent need for environmental decision-making processes to consider cumulative impacts. St. James Parish is located within an 85-mile stretch along the Mississippi River where communities live near approximately 200 fossil fuel and petrochemical facilities.[3] Today, this area is known as "Cancer Alley"[4] due to the significantly elevated cancer rates that residents experience.[5] Communities in this area face a deadly combination of environmental harms: Fossil fuel and petrochemical industries expose them to toxins known to cause cancer and other adverse health effects,[6] while also contributing to greenhouse gas emissions that disrupt the climate,[7] thus exacerbating the storms, flooding, and heat-related harms to which coastal Louisiana is already vulnerable.[8]

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[1] RISE St. James is a faith-based grassroots organization that is fighting for environmental justice as it works to defeat the proliferation of petrochemical industries in St. James Parish, Louisiana. *RISE St. James: Battling Petrochemical Expansion in Cancer Alley*, RISE ST. JAMES, LA., https://risestjames.org/ (last visited Feb. 15, 2025). Earth Island Institute is an international environmental organization and fiscal sponsor to more than 75 projects that are creating solutions to the interconnected challenges and threats facing our planet. *Earth Island Institute: Building a Better World through Activist Projects, Legal Advocacy, Youth Leadership, and an Award-Winning Journal*, EARTH ISLAND INST., https://www.earthisland.org/ (last visited Feb. 15, 2025). WE ACT for Environmental Justice's mission is to build healthy communities by ensuring that people of color and/or low income residents participate meaningfully in the creation of sound and fair environmental health and protection policies and practices. *Our Mission*, WE ACT FOR ENV'T JUST., https://www.weact.org/ (last visited Feb. 15, 2025).

[2] U.S. ENV'T PROT. AGENCY, INTERIM FRAMEWORK FOR ADVANCING CONSIDERATION OF CUMULATIVE IMPACTS 2 (2024) [hereinafter FRAMEWORK].

[3] *See* HUM. RTS. WATCH, "WE'RE DYING HERE": THE FIGHT FOR LIFE IN A LOUISIANA FOSSIL FUEL SACRIFICE ZONE (2024).

[4] *RISE St. James: Battling Petrochemical Expansion in Cancer Alley*, *supra* note 1.

[5] *See* Kimberly A. Terrell & Gianna St. Julien, *Air pollution is linked to higher cancer rates among black or impoverished communities in Louisiana*, 17 ENV'T RSCH. LETTERS 1, 2 (2022).

[6] *See id.* at 1-2; *see also* HUM. RTS. WATCH, *supra* note 3, at 49-50.

[7] *See* HUM. RTS. WATCH, *supra* note 3, at 30-31.

[8] *See* Petition at 3, RISE St. James v. Louisiana Dep't of Env't Quality, No. 694029 (La. Dist. Ct. 2/14/20).

Across Louisiana,[9] tracts with the highest proportions of Black and impoverished residents are associated with higher rates of toxic air pollution and cancer incidence.[10] Race is the leading predictor of exposure to environmental hazards, including air pollution,[11] and Black residents in St. James Parish disproportionately bear the burden of adverse health impacts.[12] These include increased risks of cancer, respiratory diseases, reproductive harms, and maternal and newborn health harms,[13] as well as breathing difficulties, skin rashes, and nosebleeds.[14] In addition, residents report experiencing mental anguish and fear for their health and livelihoods because of living in close proximity to numerous petrochemical facilities. Nine of the eleven facilities on EPA's Toxic Release Inventory in St. James Parish are located in Districts 4 and 5,[15] where the majority of residents are Black.[16]

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[9] "Per capita, Louisiana residents also faced the nation's highest risk of long-term chronic human health effects from toxic chemical pollution." HUM. RTS. WATCH, *supra* note 3, at 30 (citing *Low Pollution Health Risk*, U.S. NEWS & WORLD REP. (2023), https://www.usnews.com/news/best-states/rankings/natural-environment/pollution/pollution-health-risk).

[10] *See* Terrell & St. Julien, *supra* note 5, at 1, 2; *see also* Lilian S. Dorka, Letter of Concern Re: EPA Complaint Nos. 01R-22-R6, 02R-22-R6, and 04R-22-R6 (Oct. 12, 2022), https://www.epa.gov/system/files/documents/2022-10/2022%2010%2012%20Final%20Letter%20LDEQ%20LDH%2001R-22-R6%2C%2002R-22-R6%2C%2004R-22-R6.pdf (explaining that Black residents of Cancer Alley bear disproportionately elevated risks of developing cancer from toxic air pollution exposure).

[11] *See, e.g.*, LUKE W. COLE & SHEILA R. FOSTER, FROM THE GROUND UP: ENVIRONMENTAL RACISM AND THE RISE OF THE ENVIRONMENTAL JUSTICE MOVEMENT 54-55 (2001) (concluding after reviewing numerous studies that "environmental hazards: garbage dumps, air pollution, lead poisoning, toxic waste production and disposal, pesticide poisoning, noise pollution, [and] occupational hazards . . . are inequitably distributed by income or race . . ." but that "race was most often found to be the better predictor of exposure to" those hazards). *See also* Christopher W. Tessum et al., *PM2.5 polluters disproportionately and systemically affect people of color in the United States*, 7(18) SCI. ADVANCES 1, 1-6 (2021) (noting significant racial disparities in exposure to air pollution remain when controlling for income); Paul Mohai & Robin Saha, *Which Came First, People or Pollution? A Review of Theory and Evidence from Longitudinal Environmental Justice Studies*, 10 ENV'T RSCH. LETTERS, no. 125011, Dec. 2015, at 2-7.

[12] *See* HUM. RTS. WATCH, *supra* note 3, at 30-32; *see also* Dorka, *supra* note 10.

[13] *See* HUM. RTS. WATCH, *supra* note 3, at 4.

[14] CLEAN AIR TASK FORCE CLIMATE EQUITY INITIATIVE, COMMUNITY PERSPECTIVES: ST. JAMES PARISH & ST. JOHN THE BAPTIST PARISH 1, 11 (2024).

[15] Complaint at 70, Inclusive La. v. St. James Parish, No. 2:23-CV-00987 (E.D. La. 2023); *see also TRI On-site and Off-site Reported Disposed of or Otherwise Released (in pounds), for all 11 facilities, for facilities in All Industries, for All chemicals, St. James County, Louisiana*, U.S. ENV'T PROT. AGENCY, https://enviro.epa.gov/triexplorer/release_fac?p_view=COFA&trilib=TRIQ1&sort=_VIEW_&sort_fmt=1&state=22&county=22093&chemical=All+chemicals&industry=ALL&year=2023&tab_rpt=1&fld=RELLBY&fld=TSFDSP [hereinafter *TRI Facility Report*] (last visited Feb. 14, 2025).

[16] Residential areas in the majority-Black Districts 4 and 5 have been designated as "Existing Residential / Future Industrial" areas. Complaint, *supra* note 15, at 70 (citing to the St. James Parish Land Use Plan of 2014, as amended in 2018); *see* ANNE ROLFES & JUSTIN KRAY, RISE ST. JAMES & LOUISIANA BUCKET BRIGADE, A PLAN WITHOUT PEOPLE: WHY THE ST. JAMES 2014 LAND USE PLAN MUST BE CHANGED 2 (2019) (discussing the use of this designation only in Districts 4 and 5 and its consequences for residents); *see generally* STEVE LERNER, SACRIFICE ZONES: THE FRONT LINES OF TOXIC CHEMICAL EXPOSURE IN THE UNITED STATES 6 (2010) (describing designations of areas as "residential / industrial" as a "particularly pernicious type of zoning" that can give rise to "sacrifice zones").

The Framework takes a crucial step toward preventing environmental inequities—like those experienced in St. James Parish—by supporting regulators' consideration of cumulative impacts.[17] Parish residents have long suffered from regulators facilitating petrochemical development without adequately accounting for the stressors that communities already face.[18] Indeed, EPA has noted the Louisiana Department of Environmental Quality's (LDEQ) failure to appropriately study the cumulative adverse, disparate impacts on Black communities near LDEQ-permitted industrial facilities.[19] The resulting health crisis in Cancer Alley is a stark example of the failures to incorporate cumulative impacts in environmental decision-making—rendering this Framework critical for the lives and wellbeing of communities in Cancer Alley and across the country.[20]

Based on decades of lived experiences and work in support of communities who face the severe effects of compounding environmental burdens, the Commenters strongly support EPA's efforts to promote cumulative impacts analysis, including through the creation of the Framework. In line with EPA's "place matters" approach,[21] this Comment centers the majority-Black Districts 4 and 5 of St. James Parish, Louisiana, which typify the urgent need to incorporate cumulative impacts analysis into environmental decision-making processes. Part II of this Comment describes conditions in Cancer Alley, including St. James Parish, to evidence the need to consider cumulative impacts and to highlight specific features of the Framework that are particularly important to the Commenters. Part III of this Comment offers recommendations for further strengthening the Framework.

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[17] Cumulative impacts include the totality of chemical and nonchemical stressors and their effects on the wellbeing of surrounding communities. FRAMEWORK, *supra* note 2, at 2. They can manifest over decades of inequitable decision-making. For instance, a regulator might provide permits for two industrial plants that, individually, comply with environmental regulations, but when these facilities are sited next to each other, their combined effects might be unpredictable, irreversible, or otherwise more dangerous to local communities, especially vulnerable and marginalized communities who are already burdened by other types of stressors. *See generally* BRAM NOBLE, *Cumulative Effects Assessment*, in ROUTLEDGE HANDBOOK OF ENVIRONMENTAL IMPACT ASSESSMENT 42, 43 (Kevin Hanna ed., 1st ed. 2022); *see also* JILL A. E. BLAKLEY, *Introduction: Foundations, issues and contemporary challenges in cumulative impact assessment*, in HANDBOOK OF CUMULATIVE IMPACT ASSESSMENT 1, 6 (Jill A. E. Blakley ed., 1st ed. 2021) (discussing types of cumulative impacts and how they emerge).

[18] *See generally* HUM. RTS. WATCH, *supra* note 3, at 5-74; *see also supra* text accompanying notes 9-16.

[19] *See* Dorka, *supra* note 10, at 22 (noting that LDEQ should have performed a cumulative impact analysis given the disparity of impacts and adversity faced by St. James Parish's Black residents).

[20] The Framework acknowledges cumulative impacts of place-based inequalities in exposures to environmental hazards are significant. *See* FRAMEWORK, *supra* note 2, at 6.

[21] The Commenters support EPA's recognition that "place matters." At the same time, the Commenters emphasize that race is a uniquely important factor to consider in cumulative impacts analysis, as race is the leading predictor of exposure to environmental hazards in the United States. *See* sources cited *supra* note 11.

II. Conditions in St. James Parish Demonstrate the Need to Consider Cumulative Impacts

St. James Parish reveals the complex array of stressors that regulators should incorporate in environmental decision-making to avoid imposing or aggravating cumulative burdens on communities. Black communities such as those in St. James Parish face disproportionate environmental risks and impacts, including the adverse effects of toxic pollution[22] and climate change.[23] Part II begins by describing how the legacies of slavery and systemic racism have given rise to this situation, focusing on moral injuries caused by the siting of petrochemical facilities on the burial grounds of enslaved people.[24] Part II then outlines the adverse climate impacts to which fossil fuel and petrochemical industries contribute[25] and the harms to human and environmental health associated with these industries' toxic emissions.[26] Finally, Part II points to the Formosa "Sunshine Project" as a prime example of a facility that should not have been permitted, given the cumulative impacts that it will impose on already overburdened communities.[27]

A. Commenters Support the Framework's Consideration of Communities' Histories and Cultural Sites.

The Framework rightly establishes that cumulative impacts analysis must include consideration of "communities' histories" and "social stressors."[28] In the context of a place like St. James Parish, a cumulative impacts analysis would consider such factors as the ongoing legacies of slavery[29] and systemic racism, which result in historically marginalized communities facing excessive environmental hazards today.[30]

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[22] *See* ROBERT D. BULLARD ET AL., TOXIC WASTES AND RACE AT TWENTY 1987-2007 (2007).
[23] *See* U.S. ENV'T PROT. AGENCY, CLIMATE CHANGE AND SOCIAL VULNERABILITY IN THE UNITED STATES: A FOCUS ON SIX IMPACTS (2021).
[24] *See Graves of Enslaved People Found on Proposed Formosa Plastics Site*, CTR. FOR CONST. RTS. (Dec. 18, 2019), https://ccrjustice.org/home/press-center/press-releases/graves-enslaved-people-found-proposed-formosa-plastics-site.
[25] *See* HUM. RTS. WATCH, *supra* note 3, at 17.
[26] *See generally id.* at 35.
[27] *See generally* JANE PATTON ET AL., CTR. FOR INT'L ENV'T L. ET AL., FORMOSA PLASTICS GROUP: A SERIAL OFFENDER OF ENVIRONMENTAL AND HUMAN RIGHTS 41-50 (2021).
[28] FRAMEWORK, *supra* note 2, at 11-12.
[29] *See generally* Complaint, *supra* note 15, at 5.
[30] *See generally* BULLARD ET AL., *supra* note 22; *see also* HUM. RTS. WATCH, *supra* note 3; Terrell & St. Julien, *supra* note 5.

Contemporary environmental racism in St. James Parish is built upon the history of slavery and plantations. Following the abolition of slavery,[31] many areas around Louisiana's 500 plantations[32] became freetown communities where formerly enslaved people purchased and lived on their own land.[33] Fossil fuel companies arrived in Louisiana around the 1900s, buying plantation land to construct facilities and thereby transforming freetowns into fenceline communities.[34] Today, more than 200 fossil fuel and petrochemical facilities overlay former plantations,[35] where they continue to devastate the surrounding Black communities through chemical exposure.[36]

Compounding these burdens, a long history of voter suppression,[37] zoning regulations, and exclusion from local politics has obstructed St. James Parish's Black communities from effectively organizing against industrial facilities' growth.[38] In Louisiana and throughout the United States, such histories continue to manifest in the disparities that many Black Americans face in education,

[31] Although Abraham Lincoln issued the Emancipation Proclamation in 1863, the Proclamation explicitly excluded enslaved people in St. James Parish and several other specific localities in the southern United States. Proclamation No. 95, Regarding the Status of Slaves in States Engaged in Rebellion Against the United States (Jan. 1, 1863). Louisiana did not formally abolish slavery in these localities until 1864. Complaint, *supra* note 15, at 20-22.
[32] FORENSIC ARCHITECTURE, ENVIRONMENTAL RACISM IN DEATH ALLEY, LOUISIANA PHASE I INVESTIGATIVE REPORT 3, 6 (2021).
[33] Julia Mizutani, *In the Backyard of Segregated Neighborhoods: An Environmental Justice Case Study of Louisiana*, 31 GEO. ENV'T L. REV. 363, 373 (2019).
[34] *Id.* (detailing how plantations adjacent to Black communities in Cancer Alley "were sold to industries dependent on river access to ship . . . petroleum products"); *see* FORENSIC ARCHITECTURE, *supra* note 32, at 6; *see also* HUM. RTS. WATCH, *supra* note 3, at 4 (describing how residents currently live among some 200 fossil fuel and petrochemical operations along the Mississippi River); *see generally* Craig E. Colton, *The Rusting of the Chemical Corridor*, 47 TECH. & CULTURE 95, 95-96 (2006).
[35] Dorka, *supra* note 10, at 9 (quoting Anya Groner, *Louisiana Chemical Plants are Thriving Off of Slavery*, ATLANTIC (May 7, 2021) to document how the property lines of today's petrochemical and petroleum plants in southern Louisiana often remain the same as those of the former plantations); *see also* FORENSIC ARCHITECTURE, *supra* note 32, at 3. Some residents of St. James Parish live on land purchased by their ancestors, some of whom were enslaved at nearby plantations. *See* HUM. RTS. WATCH, *supra* note 3, at 51, 94.
[36] *See* HUM. RTS. WATCH, *supra* note 3, at 30.
[37] Following the Civil War, St. James Parish and Louisiana experienced frequent violence by white citizens. Complaint, *supra* note 15, at 38-41. In 1898 Louisiana adopted a new state constitution—known as the "Jim Crow Constitution"—which imposed voter requirements such as literacy tests, poll taxes, and land ownership to disenfranchise Black citizens. *Id.* at 43-45.
[38] Complaint, *supra* note 15, at 50-51; *see generally* Report of the Working Group of Experts on People of African Descent on its mission to the United States of America, ¶ 7, U.N. DOC. A/HRC/33/61/Add.2 (Aug. 18, 2016) [hereinafter Report of the Working Group].

health, housing, and employment[39]—as well as in the heightened environmental burdens that these communities bear.[40]

In addition, the Framework rightly asks the EPA to consider "lived experience" in cumulative impacts analysis, which includes, when appropriate, "information on cultural and historic practices and places . . . and sacred and religious sites."[41] St. James Parish demonstrates the importance of such factors. Recent archaeological research has uncovered burial grounds of those who likely worked and lived as enslaved people on plantations in southern Louisiana.[42] Despite the cultural and spiritual significance of these findings for surrounding communities, regulators have permitted the construction of petrochemical facilities at these sites.[43] For example, an affiliate of Formosa Plastics Group, a Taiwanese plastics company, is attempting to construct a new petrochemical complex at such sites in St. James Parish,[44] thus threatening to desecrate and even destroy the graves of enslaved people and cleave residents from their ancestors.[45]

The interwoven impacts of historic discrimination and industrial development in St. James Parish demonstrate the importance of including such considerations within cumulative impacts analysis. As EPA implements the Framework, it should work to identify and assess ongoing legacies of systemic racism, and it should carefully contemplate the histories and sites that communities consider to be socially, culturally, and spiritually significant.

B. Commenters Support the Framework's Consideration of Communities' Geographic and Climate Vulnerability.

The Framework correctly acknowledges that geography and climate may directly or indirectly affect the wellbeing of a community, such as by exacerbating the effects of chemical exposure.[46] Indeed, "place matters"[47] in cumulative impacts analysis—particularly for

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[39] Report of the Working Group, *supra* note 38, at ¶¶ 43-55; *see also* Jennifer L. Scott et al., *Place, Race, and Case: Examining Racialized Economic Segregation and COVID-19 in Louisiana*, 10 J. OF RACIAL AND ETHNIC HEALTH DISPARITIES 775, 776 (2023) (discussing racial disparities due to structural inequities).
[40] *See* BULLARD ET AL., *supra* note 22.
[41] FRAMEWORK, *supra* note 2, at 12.
[42] FORENSIC ARCHITECTURE, *supra* note 32, at 3. At least three cemeteries have been identified on Formosa's property. *Id.* Given the proliferation of plantations along the Mississippi River prior to the abolition of slavery, there are likely hundreds of cemeteries that may be affected by industrial activity in Cancer Alley. *Id.*
[43] *See, e.g.*, *Graves of Enslaved People Found on Proposed Formosa Plastics Site*, *supra* note 24.
[44] *Id.*; *see also infra* Part II(D).
[45] *See Graves of Enslaved People Found on Proposed Formosa Plastics Site*, *supra* note 24.
[46] *See* FRAMEWORK, *supra* note 2, at 33-34 (noting geographic and climate-related factors as extrinsic or nonchemical stressors).
[47] *Id.* at 4. Race, however, remains the leading predictor of cumulative environmental burden. *See* sources cited *supra* note 11.

communities like St. James Parish, which face mounting natural hazards and the frontlines of climate change.

The Mississippi River Delta was formed by a balance of natural forces that create[48] or deteriorate[49] land. Human activity has upended this balance—a problem exacerbated by industrial development, including fossil fuel production and major construction projects.[50] The consequence has been large-scale land loss,[51] increased flood vulnerability,[52] and costly environmental degradation.[53] Although it is not directly adjacent to the Gulf, St. James Parish is not immune to these forces. In the coming decades, the Parish may lose six percent of its land area[54] and face significantly increased flood vulnerability.[55]

While these natural hazards would, alone, add substantial stress to this community, additional climatic threats exacerbate the Parish's geographic vulnerability. Together with the rest

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[48] The Mississippi River delivers sediment into the deltaic headland of Louisiana, building plains and protective wetlands that push seaward toward the Gulf, and these wetlands form organic soil, stabilizing and maintaining coastal marshes. Mike Blum et al., *Land loss in the Mississippi River Delta: Role of subsidence, global sea-level rise, and coupled atmospheric and oceanographic processes*, 222 GLOB. & PLANETARY CHANGE, no. 104048, Mar. 2023, at 2-4.

[49] The sea naturally erodes and redistributes coastlines, while river-deposited sediments compact and dewater under their own weight. *See* Torbjörn E. Törnqvist et al., *Mississippi Delta subsidence primarily caused by compaction of Holocene strata*, 1(3) NATURE GEOSCIENCE 173, 173-76 (2008); *see also* Blum et al., *supra* note 48, at 13-14. If wetlands do not grow sufficiently to offset land-deteriorating forces, land gain reverses and the ocean returns to submerge low-lying areas. Blum et al., *supra* note 48, at 2.

[50] *See, e.g.,* Blum et al., *supra* note 48, at 7 (noting Mississippi River levees redirect sediment deposits and maintain delta land); *see also* Jae-Young Ko & John W. Day, *A review of ecological impacts of oil and gas development on coastal ecosystems in the Mississippi Delta*, 47 OCEAN & COASTAL MGMT. 597, 612-13 (2004) (observing canals reducing sediment input into wetlands while facilitating erosion and saltwater intrusion); Ellen P. Mallman & Mark D. Zoback, *Subsidence in the Louisiana Coastal Zone due to Hydrocarbon Production*, 50 J. COASTAL RSCH. 443, 443-49 (2007) (finding fossil fuel production contributing to subsidence); *and* CITY OF NEW ORLEANS, ASSESSMENT OF LAND SUBSIDENCE IN NEW ORLEANS 38 (2023) (discussing construction-related compaction contributing to subsidence); N.J. Craig et al., *Land Loss in Coastal Louisiana,* 3 ENV'T MGMT. 133, 133-144 (1979) (noting construction dredging's contribution to local erosion).

[51] Coastal Louisiana has lost land area roughly equal to the size of Delaware over the last century. *Compare* Blum et al., *supra* note 48, at 1 ("A coastwide land loss of ~5000 km^2 is now well documented for the period 1932 to 2016"), *with Facts and Symbols*, DELAWARE, https://delaware.gov/guides/facts/ (last visited Feb. 17, 2025) (indicating that Delaware's total area is approximately 5,133.36 km^2).

[52] *See, e.g.*, COASTAL PROT. & RESTORATION AUTH. OF LA., LOUISIANA'S COMPREHENSIVE MASTER PLAN FOR A SUSTAINABLE COAST 76-84 (2017) [hereinafter LOUISIANA COASTAL PLAN].

[53] *See id.* at ES-11, 76-84 (describing increasing flood vulnerability that threatens twelve billion dollars in annual flood-related damage in fifty years' time under a "medium scenario").

[54] *Id.* at A9 35 (projecting six percent land loss in fifty years' time for the parish when applying a "medium" climate change scenario).

[55] *Id.*; *see also 4_8 Flood Water Model*, ST. JAMES PARISH, https://www.stjamesla.com/DocumentCenter/View/210/Flood-Water-Model-PDF?bidId= (last visited Feb. 17, 2025); FED. EMERGENCY MGMT. AGENCY, COASTAL CONSTRUCTION MANUAL: PRINCIPLES AND PRACTICES OF PLANNING, SITING, DESIGNING, CONSTRUCTING, AND MAINTAINING RESIDENTIAL BUILDINGS IN COASTAL AREAS 3-24 (FEMA P-55 (1), 2011) (discussing how land subsidence contributes to increased coastal flood vulnerability).

of Cancer Alley's industrial facilities, St. James Parish's twenty-four facilities emit significant climate-disrupting pollutants.[56] Between 2016-2021, industrial facilities in Cancer Alley released carbon dioxide emissions roughly equivalent to the annual releases of 140 coal-powered plants.[57] Climate change, in turn, endangers St. James Parish in numerous ways.

First, climate change contributes to sea-level rise,[58] which has an exaggerated effect in the Mississippi River Delta region.[59] Far outpacing the delta's land-creating forces, the encroaching ocean will reach further inland, while its saltwater will penetrate and degrade critical protective wetlands.[60] An intermediate climate change scenario may, in the next 50 years, substantially increase flood vulnerability in Districts 4 and 5 and aggravate land loss in District 5.[61] This context is important to environmental decision-making that affects land use in those districts.

An additional climate threat is emerging in the form of more frequent and severe hurricanes.[62] Indeed, numerous major hurricanes have impacted Louisiana over the past five years.[63] Beyond contributing to coastal erosion and damaging wetland vegetation,[64] these storms

[56] Complaint, *supra* note 15, at 90-91; *see also* HUM. RTS. WATCH, *supra* note 3, at 15-17.
[57] HUM. RTS. WATCH, *supra* note 3, at 15 (documenting that, in 2020, "66 percent of Louisiana's reported annual greenhouse gas emissions were produced by some 150 industrial facilities in Cancer Alley, virtually all of which are fossil fuel and petrochemical operations"); *see also* STATE OF LA., LOUISIANA PRIORITY CLIMATE ACTION PLAN 8 (2024) (indicating that "the industrial sector contributes an overwhelming 66% of overall state emissions").
[58] HANS-OTTO PÖRTNER ET AL. EDS., IPCC SPECIAL REPORT ON THE OCEAN AND CRYOSPHERE IN A CHANGING CLIMATE 10 (2019) (describing causes of global sea-level rise).
[59] *See* Blum et al., *supra* note 48, at 11; *see also* Denise Reed et al., *Modeling wetland transitions and loss in coastal Louisiana under scenarios of future relative sea-level rise*, 352 GEOMORPHOLOGY, no. 106991, Mar. 2020, at 8-9.
[60] Blum et al., *supra* note 48, at 12 (finding that natural sedimentation rates would need to double to offset land loss from climate change in the region of the Mississippi Delta); *see* Reed et al., *supra* note 59, at 8-9 (noting land loss degrades wetlands).
[61] *See* LOUISIANA COASTAL PLAN, *supra* note 52, at A-9 35 (demonstrating land loss in District 5 and significant increase in flood vulnerability from 100-year storm events in Districts 4 and 5 within 50 years, absent policy intervention).
[62] PÖRTNER ET AL., EDS., *supra* note 58, at 516-17 (summarizing how climate change contributes to more intense and frequent tropical storms); *see* Jena A. Moon et al., *Surface Elevation Change Dynamics in Coastal Marshes Along the Northwestern Gulf of Mexico: Anticipating Effects of Rising Sea-Level and Intensifying Hurricanes*, 42 COASTAL WETLANDS 1, 3 (2022).
[63] *See Billion-Dollar Weather and Climate Disasters: Louisiana Summary*, NAT'L CTRS. FOR ENV'T INFO. OF THE NAT'L OCEANIC AND ATMOSPHERIC ADMIN., https://www.ncei.noaa.gov/access/billions/state-summary/LA (last visited Feb. 15, 2025) (documenting impacts of Hurricanes Laura (Aug. 2020), Sally (Sept. 2020), Delta (Oct. 2020), Zeta (Oct. 2020), Ida (Aug. 2021), Nicholas (Sept. 2021), Beryl (July 2024), and Francine (Sept. 2024), among other major weather events that have caused more than $1 billion in damage in Louisiana).
[64] *See* Ko & Day, *supra* note 50, at 612 (discussing wave erosion increases during storms); *see generally* Marcelo C. L. Cohen et al., *Hurricanes are limiting the mangrove canopy heights in the Gulf of Mexico,* 927 SCI. TOTAL ENV'T., no. 172284, June 2024, at 1.

accelerate land loss and threaten lives and property in local communities.[65] St. James Parish faces significant risks of hurricane-related damage.[66] For example, when Hurricane Ida hit St. James Parish, it inflicted major infrastructure and property damage, including to the home of RISE St. James founder Sharon Lavigne.[67] Community members report that some elderly residents were unable to evacuate where fallen trees trapped people in their homes following the storm.[68] They also report that parts of the Parish had to rely on individual community members to organize relief efforts due in large part to inadequate emergency response measures by public officials. Just a few weeks later, Hurricane Nicholas hit the Parish and exacerbated storm-related damage.[69]

Furthermore, increasingly frequent and damaging hurricanes may compound St. James Parish's already elevated chemical exposures. Industrial facilities sometimes emit pollutants at levels above normal limits following hurricanes.[70] In 2021, for example, Hurricane Ida caused parts of the Parish to lose power for around fifteen days, but emissions from industrial plants did not stop. On the contrary, community members witnessed large flares from nearby plants and experienced a widespread, suffocating smell of chemicals even as they were outdoors to assist neighbors with recovery efforts.

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[65] *Hurricane Costs,* NAT'L OCEANIC & ATMOSPHERIC ADMIN., https://coast.noaa.gov/states/fast-facts/hurricane-costs.html (last visited Feb. 6, 2025) (noting hurricanes have killed thousands and caused $1.3 trillion in economic damage nationwide since 1980).

[66] LOUISIANA COASTAL PLAN, *supra* note 52, at A-9 35 (projecting $80 million in annual economic damage in St. James Parish from storm surge-based flooding by 2067).

[67] Julie Demansky & Sharon Kelly, *Hurricane Ida Badly Damages Home of Goldman Prize Winner Sharon Lavigne and Others in Louisiana's Cancer Alley*, DESMOG (Aug. 30, 2021), https://www.desmog.com/2021/08/30/hurricane-ida-damages-goldman-prize-sharon-lavigne-louisiana-cancer-alley/.

[68] Additionally, former evacuation routes have been closed. *See* ROLFES & KRAY, *supra* note 16, at 2, 15.

[69] Climate change-linked storms constitute acute public health risks. *See, e.g.*, Kevin A. Caillouët et al.*, Increase in West Nile neuroinvasive disease after Hurricane Katrina,* 14(5) EMERGING INFECTIOUS DISEASES 804, 804-807 (2008) (disease); Ethan J. Raker et al., *Twelve years later: The long-term mental health consequences of Hurricane Katrina,* 242 SOC. SCI. MED., no. 112610, Sept. 2019, at 2 (discussing mental trauma); Sara A. Colangelo, *Bridging Silos: Environmental and Reproductive Justice in the Climate Crisis*, 112 CAL. L. REV. 1255, 1280-81 (2024) (cataloguing maternal health impacts).

[70] *See, e.g.*, NAOMI YODER & SHEEHAN MOORE, MURKY WATERS: AN ANALYSIS OF HURRICANE IDA POLLUTION REPORTS 2 (2022) (finding Hurricane Ida resulted in more than 2,200 pollution events, most of which were linked to the fossil fuel industry); *see also* Naveena Sadasivam, *Experts: Much of Harvey-Related Air Pollution Was Preventable*, TEX. OBSERVER (Sept. 7, 2017, 3:27 PM), https://www.texasobserver.org/early-shut-downs-upgrades-could-have-avoided-millions-of-pounds-of-pollutants-released-during-harvey/; Zahra Hirji, *One of the Largest US Petrochemical Plants Is Spewing Excessive Smoke After Hurricane Ida Knocked Out Its Power*, BUZZFEED NEWS (Sept. 2, 2021, 11:41 AM), https://www.buzzfeednews.com/article/zahrahirji/shell-refinery-air-pollution-hurricane-ida.

Additionally, hurricanes present a growing threat to the stability of hazardous waste sites.[71] Hurricanes may cause leaks or spills and, in places like Louisiana, dislodge contaminated soil into adjacent waters and wetlands.[72] When Hurricane Harvey impacted southeast Texas in 2017, it flooded, damaged, or otherwise affected thirteen Superfund sites;[73] thereafter, studies documented higher levels of chemical exposure among nearby residents.[74] St. James Parish is located near multiple Superfund sites and hosts numerous industrial facilities that produce or store toxic chemicals[75]—dangers the Framework would encourage regulators to consider in the decision-making process.

Finally, St. James Parish is affected by elevated temperatures and extreme heat waves driven by climate change.[76] Heat stress endangers vulnerable populations, including those with chronic health conditions, infants, young children, and pregnant women.[77] Heat waves and higher temperatures correlate with preterm births, stillbirths, low birth weight, and infant mortality,[78] and

[71] *See* GOV'T ACCOUNTABILITY OFF., SUPERFUND: EPA SHOULD TAKE ADDITIONAL ACTIONS TO MANAGE RISK FROM CLIMATE CHANGE EFFECTS 20-21 (2022) (identifying 713 nonfederal National Priorities List sites—or "approximately 45 percent of all sites"—as being located in areas that fall within FEMA's highest flood hazard category).

[72] *See* David Hasemyer & Lise Olsen, *Battered, Flooded and Submerged: Many Superfund Sites are Dangerously Threatened by Climate Change*, INSIDE CLIMATE NEWS (Sept. 24, 2020), https://insideclimatenews.org/news/24092020/climate-change-epa-superfund-sites-hurricanes-floods-fires-sea-level-rise/.

[73] *Status of Superfund Sites in Areas Affected by Harvey*, U.S. ENV'T PROT. AGENCY (Sept. 2, 2017), https://www.epa.gov/archive/epa/newsreleases/status-superfund-sites-areas-affected-harvey.html.

[74] *See, e.g.*, Samantha M. Samon et al., *Associated Increased Chemical Exposure to Hurricane Harvey in a Longitudinal Panel Using Silicone Wristbands*, 19(11) INT. J. ENV'T. RSCH. PUB. HEALTH 6669 (2022); *see generally* Garett T. Sansom et al., *Spatial Distribution of Polycyclic Aromatic Hydrocarbon Contaminants after Hurricane Harvey in a Houston Neighborhood*, 11(29) J. HEALTH POLLUTION 1 (2021).

[75] *See National Priorities List and Superfund Alternative Approach Sites*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/superfund/search-superfund-sites-where-you-live (last visited Feb. 17, 2025) (indicating multiple sites that are or have been on the National Priorities List are located around the city of Baton Rouge and in Ascension Parish, upriver of St. James Parish); *see also* Complaint, *supra* note 15, at 90.

[76] *Does St. James Parish Have Heat Risk?*, FIRST ST. TECH., https://firststreet.org/county/st.-james-parish-la/22093_fsid/heat (last visited Feb. 17, 2025).

[77] *What Climate Change Means for Louisiana*, U.S. ENV'T PROT. AGENCY (Aug. 2016), https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-la.pdf (explaining excessive air temperatures can induce illness and exacerbate pollutant impacts, aggravating lung diseases); *see* Michael A. McGeehin & Maria C. Mirabelli, *The Potential Impacts of Climate Variability and Change on Temperature-Related Morbidity and Mortality in the United States*, 109 ENV'T HEALTH PERSPECTIVES 185, 185 (2001); Gulcan Cil & Trudy Anne Cameron, *Potential Climate Change Health Risks from Increases in Heat Waves: Abnormal Birth Outcomes and Adverse Maternal Health Conditions*, 37 RISK ANALYSIS 2066, 2075-2077 (2017).

[78] *See* Gulcan Cil & Trudy Anne Cameron, *supra* note 77, at 2072-74, 2077 (examining adverse conditions such as fetal distress and reliance on a ventilator at birth).

they expand the range of mosquito-borne illnesses.[79] In Louisiana, the Black community is disproportionately likely to die from or require emergency care for heat-related illnesses.[80] In 2024, there were 36 emergency department visits for heat-related illnesses in St. James Parish alone.[81]

These geographic and climatic pressures compound the numerous social stressors already faced by residents of St. James Parish, making their consideration essential in any comprehensive cumulative impacts analysis. When considering permitting additional industrial sites, regulators must weigh not only the area's geographic vulnerability but also the climate-related consequences of any given decision. As it implements the Framework, EPA should integrate these factors into environmental decision-making and work to reduce the mounting burdens on communities like those in St. James Parish.

C. Commenters Support the Framework's Consideration of Aggregate Chemical Exposure.

In addition to historical and climate factors, the Framework appropriately identifies that a full cumulative impacts analysis should consider how aggregate and disproportionate chemical exposures harm human health, quality of life, and the environment.[82] The Framework also correctly suggests that areas with clustered industrial facilities and an elevated prevalence of illness in the community should trigger a cumulative impacts analysis.[83] Had regulators historically considered the harms of new *and* existing emissions, life in St. James Parish might be much different today.

Districts 4 and 5 of St. James Parish are the site of twenty of the two dozen heavy industrial facilities in the Parish,[84] including nine of the Parish's eleven facilities on the EPA's Toxic Release Inventory,[85] with more on the way. While regulators continue to permit facilities in the majority-

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[79] *See* David Gladow, *Mosquito-borne diseases on the rise*, TUL. U. SCH. PUB. HEALTH (Nov. 11, 2024, 2:22 PM), https://sph.tulane.edu/print/pdf/node/15134 (indicating that climate change contributes to warmer and more humid conditions in which mosquito populations thrive).

[80] *See Heat-Related Illness: Data Dashboard and Guidance,* LA. DEP'T OF HEALTH, https://ldh.la.gov/page/heat (last visited Feb. 11, 2024) (documenting 2024 data demonstrating that the Black population reported nearly the same number of heat-related deaths as the white population, as well as nearly 75% as many emergency department visits). The white population is nearly twice the size of the Black population in Louisiana. *Louisiana: Race and Ethnicity*, U.S. CENSUS BUREAU, https://data.census.gov/profile/Louisiana?g=040XX00US22 (last visited Feb. 17, 2025).

[81] *See Heat-Related Illness: Data Dashboard and Guidance*, *supra* note 80.

[82] *See* FRAMEWORK, *supra* note 2, at 5-6, 11, 13.

[83] *Id.* at 17 (listing "colocation of multiple (or a high density of) pollution emitting facilities" as a factor in triggering analysis).

[84] Complaint, *supra* note 15, at 90-91.

[85] *Id.* at 70; *see also TRI Facility Report*, *supra* note 15.

Black districts of the Parish, independent analyses indicate that none have been built in majority-white communities in nearly fifty years.[86] Predictably, the residents of Districts 4 and 5 experience disproportionate harm from toxic air pollution, including exposure to carcinogenic chemicals at levels estimated to be higher than 99.6% of industrialized areas in the United States.[87] Such chemical exposures are associated with adverse effects on human health, quality of life, and the environment. All of these effects must be incorporated within cumulative impacts analyses, as illustrated by the experience of the residents of Districts 4 and 5 of St. James Parish.

Devastating Effects on Human Health in Cancer Alley

Cumulative impacts analysis should consider all health risks associated with aggregate toxic chemical emissions from co-located facilities. The analysis should not be limited to criteria pollutants but include all known carcinogens and hazardous chemicals, such as vinyl chloride,[88] benzene,[89] ethylene oxide,[90] dioxins,[91] and others.[92] Referred to as "the most toxic man-made chemical ever made,"[93] dioxins and dioxin-like compounds are a particularly hazardous byproduct

[86] HUM. RTS. WATCH, *supra* note 3, at 32.
[87] 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.
[88] "Vinyl chloride is a volatile compound used almost exclusively by the plastics industry to produce polyvinyl chloride (PVC) and several copolymers in the United States. The majority of the vinyl chloride produced at manufacturing facilities is converted to PVC and vinyl chloride derived copolymers on-site." AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, U.S. DEP'T OF HEALTH & HUM. SERVS., TOXICOLOGICAL PROFILE FOR VINYL CHLORIDE 1 (2024) [hereinafter VINYL CHLORIDE]. Vinyl chloride exposure increases the risk of liver, stomach, and breast cancer. *Id.* at 3, 14, 87-88.
[89] Benzene is associated with an increased risk of leukemia. AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, U.S. DEP'T OF HEALTH & HUM. SERVS., TOXICOLOGICAL PROFILE FOR BENZENE 2 (2024).
[90] Ethylene oxide, even at minimal levels of exposure, increases the risk of leukemia, breast cancer, and non-Hodgkin lymphoma, and may increase the risk of stomach cancer. AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, U.S. DEP'T OF HEALTH & HUM. SERVS., TOXICOLOGICAL PROFILE FOR ETHYLENE OXIDE 6, 38, 52 (2022) [hereinafter ETHYLENE OXIDE].
[91] Dioxins are linked to cancer; reproductive problems, including decreased sperm production in males and decreased fertility in females; developmental problems, including low birth weight and neurological development deficiencies; immunological impairment; and liver damage. AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, U.S. DEP'T OF HEALTH & HUM. SERVS., TOXICOLOGICAL PROFILE FOR CHLORINATED DIBENZO-P-DIOXINS 4, 7, 223, 271 (2024) [hereinafter DIOXINS].
[92] Ethylene oxide, chloroprene, and ammonia exposure all contribute to pulmonary ailments, including exacerbation of asthma, bronchitis, emphysema, and nose bleeds. *See* ETHYLENE OXIDE, *supra* note 90, at 5-6; *see also* U.S. DEP'T OF HEALTH & HUM. SERVS., CHLOROPRENE, 15TH REPORT ON CARCINOGENS; AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, U.S. DEP'T OF HEALTH & HUM. SERVS., TOXICOLOGICAL PROFILE FOR AMMONIA 24 (2004).
[93] Jose Gnanaleela Aswin Jeno et al., *Biological Implications of Dioxins/Furans Bioaccumulation in Ecosystems*, *in* ENVIRONMENTAL POLLUTION AND REMEDIATION 396 (Ram Prasad, ed., Springer 2021).

of petrochemical production.[94] As persistent organic pollutants, they take an extremely long time to break down once they enter the environment, creating grave health and environmental concerns for generations to come.[95]

Residents of Districts 4 and 5 are exposed to these dangerous substances in alarming quantities, with dire consequences.[96] People in Cancer Alley are in the top 5 percent of cancer risk in the nation—a risk disproportionately borne by Black residents.[97] Entire neighborhoods and whole families in St. James Parish are plagued by breast, prostate, lung, and liver cancer, lymphoma, and more.[98] Several women in the area have had multiple lumpectomies, and some young women have lumpectomies and hysterectomies as a precaution against developing cancer.[99] Some residents of St. James Parish and surrounding areas can name around 50 people they knew personally who have died of cancer.[100] Owing to the extremely high rates of cancer in Districts 4 and 5, many residents are advocating for industry-funded early detection testing for community members.

Not only can chemical exposure devastate families, but its harms can extend across generations in the form of maternal, reproductive, and neonatal health challenges, including birth loss,[101] premature birth,[102] delayed fetal bone development,[103] fetal nervous system defects,[104] low

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[94] DIOXINS, *supra* note 91, at 4-7; *see also* Nguyen Thi Hong Nhung et al., *A Review of Soil Contaminated with Dioxins and Biodegradation Technologies: Current Status and Future Prospects*, 10 TOXICS, no. 279, May 2022, at 1-2.
[95] DIOXINS, *supra* note 91 at 357, 430.
[96] *See* Younes, *supra* note 87; *see also Louisiana Mapping Portal*, FORENSIC ARCHITECTURE, https://louisiana.forensic-architecture.org (last visited Feb. 17, 2025) (identifying the emission of ammonia, benzene, chloroprene, ethylene oxide, nitrogen oxides, and fine particulate matter from active and/or permitted facilities in St. James Parish and surrounding parishes).
[97] *See* HUM. RTS. WATCH, *supra* note 3, at 48-49.
[98] *Id.* at 47-51.
[99] *Id.* at 47.
[100] *Id.* at 51.
[101] *See* DIOXINS, *supra* note 91, at 4 (describing evidence from animal testing); *see also* VINYL CHLORIDE, *supra* note 88, at 73, 75 (noting studies finding correlation between vinyl chloride exposure and birth loss in humans).
[102] Kelly K. Ferguson et al., *Environmental Contaminant Exposures and Preterm Birth: A Comprehensive Review*, 16 J. TOXICOLOGY & ENV'T HEALTH, PART B 69, 77-78, 88 (2013) (finding correlation between exposure to dioxins and phthalates–found in polyvinyl chloride–and preterm birth); Sandy LaMotte, *Foods We Eat are Covered in Plastics That May Be Causing a Rise in Premature Births, Study Says*, CNN (Feb. 6, 2024) (describing link between phthalate exposure and premature birth, and linking phthalates to PVC).
[103] *See* ETHYLENE OXIDE, *supra* note 90, at 6, 12 (discussing delayed ossification in animal studies leading to presumption of effect in humans); *see also* VINYL CHLORIDE, *supra* note 88, at 78 (finding delayed ossification in animal studies).
[104] *See* VINYL CHLORIDE, *supra* note 88, at 77 (describing developmental defects to the central nervous system observed in humans); *see also* DIOXINS, *supra* note 91, at 4.

birth weight,[105] and other birth defects.[106] The cumulative effects of these exposures have been catastrophic to St. James Parish and residents throughout Cancer Alley. In Louisiana's census tracts with the worst air pollution, rates of low birth weight are three times the national average, while the rate of preterm births is two-and-a-half times above average.[107] Both premature birth and low birth weight come with additional developmental and health risks for the child.[108] Miscarriages, emergency Cesarean sections, and a host of other reproductive issues are also common throughout Cancer Alley.[109]

These burdens are compounded by respiratory ailments linked to air pollution, ranging from severe asthma to chronic bronchitis.[110] Communities in Cancer Alley also faced higher per capita COVID-19 death rates in 2020.[111] Across Louisiana, at the parish level, higher COVID-19 death rates were associated with increased pollution burdens and with larger percentages of Black residents in the population.[112] Considering the impacts of toxic chemical exposure on human health alone should prevent siting new facilities in Districts 4 and 5. The impacts, however, do not stop there.

Erosion of Quality of Life, Community Wellbeing, and Environmental Integrity

Beyond directly endangering human health, toxic chemical exposure degrades quality of life and community wellbeing. Adults in treatment for cancer or other ailments often miss work, harming the financial security of themselves and their families.[113] Mothers who miscarry or whose babies have health complications experience additional stress and depression, which may in turn affect their ability to work and further impact maternal and reproductive health.[114] Children who

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[105] *See* DIOXINS, *supra* note 91, at 4; *see also* ETHYLENE OXIDE, *supra* note 90, at 6.
[106] *See* AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY, U.S. DEP'T OF HEALTH & HUM. SERVS., PUBLIC HEALTH STATEMENT: ETHYLBENZENE 5 (Nov. 2010); DIOXINS, *supra* note 91; VINYL CHLORIDE, *supra* note 88, at 3, 6-7; ETHYLENE OXIDE, *supra* note 90.
[107] *See* HUM. RTS. WATCH, *supra* note 3, at 55-56.
[108] *Id* at 54-58.
[109] *Id.*
[110] *Id.* at 62; *see also* Steven Klafka, Letter FG LA LLC Application to Renew its Title V Permits, Nos. 3141 to 3154, AI No.: 198351, as well as Modeled PM2.5 NAAQS violations in River Parishes (May 21, 2024), https://earthjustice.org/wp-content/uploads/2024/06/3805-formosa-title-v-ext_pm2.5-naaqs-comments_2024june26-exe-1.pdf.
[111] KIMBERLY TERRELL & WESLEY JAMES, AIR POLLUTION AND COVID-19: A DOUBLE WHAMMY FOR AFRICAN AMERICAN AND IMPOVERISHED COMMUNITIES IN CANCER ALLEY 1-2 (2020). Chronic respiratory ailments left residents of Cancer Alley more vulnerable to the COVID-19 pandemic, as reflected in disproportionate impacts of the virus on these communities. *Id.*
[112] *Id.* at 2.
[113] *See* HUM. RTS. WATCH, *supra* note 3, at 10.
[114] *See id.* at 40.

are sick from chemical exposure can miss school or be unable to focus in class, impairing their overall ability to learn.[115] For instance, some of the Commenters report that many children attending St. Louis Academy, an elementary school surrounded by emitting facilities, experience frequent nosebleeds. Further, proximity to petrochemical facilities in Districts 4 and 5 has contributed to disinvestment in the community, such as the closure of schools, post offices, and other services.[116] Plunging home values in the area diminish generational wealth and make it difficult for residents to relocate to safer areas.[117] Outdoor recreation has become unsafe for adults and children alike, degrading both health and quality of life.[118] For example, District 5 resident Sharon Lavigne has said that her grandchildren frequently return from outdoor play with skin rashes.

In addition to human health and quality of life impacts, toxic chemicals damage the environment in Cancer Alley. Water and soil pollution from petrochemical facilities has jeopardized the Parish's drinking water;[119] impacted the yields and safety of field crops, orchards, and backyard gardens;[120] and otherwise entered the food stream via bioaccumulation in chemically exposed fish and game animals, further heightening the risk of cancer and other health concerns.[121] Chemical pollution of waterways impacts not only human health but also the biota of the waterway itself.[122] Pollutants can exacerbate eutrophication, killing fish and other aquatic life and contributing to dead zones downstream.[123] Environmental degradation thus impacts life beyond Parish residents.

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[115] *See id.* at 10.
[116] ROLFES & KRAY, *supra* note 16, at 2
[117] *See* HUM. RTS. WATCH, *supra* note 3, at 42.
[118] *See, e.g.*, *id.* at 64-65; *see also* Marios P. Tsakas et al., *Outdoor Air Pollutants and the Impact on Public Health*, 1 J. OF ENV'T SCI. AND ENG'G A 1267, 1267 (Nov. 2012).
[119] ROLFES & KRAY, *supra* note 16, at 15; HUM. RTS. WATCH, *supra* note 3, at 36; *see* Nigell Moses, *High Levels of 'Forever Chemicals' in Southeast Louisiana Drinking Water Spur Concern*, LA. ILLUMINATOR (Jan. 25, 2023, 3:00 PM), https://lailluminator.com/2023/01/25/high-levels-of-forever-chemicals-in-southeast-louisiana-drinking-water-spur-concern/ (explaining how PFAS and other hazardous and carcinogenic chemicals are released from petrochemical facilities into groundwater and waterways, impairing household drinking water and further raising cancer risk).
[120] *See* HUM. RTS. WATCH, *supra* note 3, at 94; *see also* ROLFES & KRAY, *supra* note 16, at 15.
[121] *See* ROLFES & KRAY, *supra* note 16, at 15; *see also* Prem Rajak et al., *Toxic Contaminants and Their Impacts on Aquatic Ecology and Habitats*, *in* SPATIAL MODELING OF ENVIRONMENTAL POLLUTION AND ECOLOGICAL RISK 261-62 (Pravat Kumar Shit et al., eds. Woodhead, 2024).
[122] *See* Rajak et al., *supra* note 121, at 261-62.
[123] *See* Solomon Oluwaseun Akinnawo, *Eutrophication: Causes, Consequences, Physical, Chemical and Biological Techniques for Mitigation Strategies*, 12 ENV'T CHALLENGES, no. 100733, Aug. 2023, at 2-3.

As the situation in St. James Parish illustrates, environmental decision-making must consider compounding exposure to multiple toxic chemicals and the grave consequences for human health, quality of life, and environmental integrity. The Commenters urge the EPA to include these effects in a cumulative impacts analysis and properly attribute them to toxic chemical exposure. If conducted robustly in Districts 4 and 5 of St. James Parish, such an analysis could have precluded the permitting of new facilities in these overburdened communities long ago.

D. Under a Comprehensive Cumulative Impacts Analysis, Formosa's Sunshine Project Would Not Be Permitted.

Formosa Plastics' proposed Sunshine Project in District 5 of St. James Parish is emblematic of the type of project that would not, and should not, move forward if cumulative impacts were adequately considered and if regulators engaged meaningfully with the affected community. As described above, St. James Parish suffers from the legacies of slavery and systemic racism, climate disruption, and heightened exposure to toxic chemicals. Viewed cumulatively, these impacts demand that permitting authorities do not approve any facilities that would add to the existing environmental and health burdens imposed on St. James Parish, particularly in Districts 4 and 5.

Formosa Plastics and the Sunshine Project

Formosa Plastics Group[124] is a Taiwanese conglomerate and the world's fourth-largest producer of petrochemicals and plastics.[125] Formosa Plastics Group has been labeled a "serial offender" due to its record on environmental, health, and other issues.[126] Environmental organizations have documented that entities in the Formosa Plastics Group have been associated

[124] Formosa Plastics Group is a conglomerate composed of many corporations, subsidiaries, and affiliates, with complex layers of shareholder relationships. *See* FORMOSA PLASTICS GROUP, FORMOSA PLASTICS GROUP: INTRODUCTION (2018), https://www.fpg.com.tw/uploads/images/media-center/ebook-top/FPG%20Introduction2018_en.pdf; *see also* PATTON ET AL., *supra* note 27, at 12-15 (Figure 1 showing ownership structure of select entities in the Formosa Plastics Group).

[125] PATTON ET AL., *supra* note 27, at 1; *see Which competitive strategies do the largest refining and chemical companies employ?*, IHS MARKIT (2018), https://cdn.ihs.com/www/pdf/1018/CSP-Billion-Dollar-Club.pdf; FORMOSA PLASTICS GROUP, *supra* note 124.

[126] PATTON ET AL., *supra* note 27, at 1-2; Memorandum and Order at 17, San Antonio Bay Estuarine Waterkeeper v. Formosa Plastics Corp., Texas, No. 6:17-CV-0047 (S.D. Tex. 2019) ("the Court concludes that Formosa is a serial offender"). Reports also indicate that in various countries, journalists, protestors, and scientists who have documented or denounced practices associated with Formosa Plastics Group or its affiliates have faced litigation and other forms of intimidation. PATTON ET AL., *supra* note 27, at 2-3, 52-54. Formosa Plastics Group has amassed an estimated $569 million in fines and penalties since its inception. *Id.* at 2. Entities affiliated with Formosa Plastics Group have also been the subject of, or associated with, numerous lawsuits in the United States. *Id.* at 16; *see, e.g.,* Formosa Plastics Corp. USA v. Presidio Engineers & Contractors, Inc., 960 S.W.2d 41, 43-44, 48-49 (Tex. 1998); *see also* United States v. Millet, 123 F.3d 268 (5th Cir. 1997) (affirming conviction of St. John the Baptist Parish President Lester Millet Jr. for extortion, money laundering, and violation of the Travel Act related to his role as Parish president during Formosa's attempts to locate a heavy industrial facility in the Parish).

with "the pollution of over 125 miles of coastline in Vietnam […]; the dumping of mercury-laced waste in Cambodia […]; and incidents and accidents that have killed more than two dozen workers."[127] One Formosa affiliate, Formosa Plastics Corp., Louisiana, operates a PVC manufacturing plant in Baton Rouge[128] that has been cited for years of Clean Air Act violations.[129] Given the economic, health, and environmental damage that industrial pollution can inflict on nearby communities, the EPA should consider a company's record of noncompliance when determining whether to conduct a cumulative impacts analysis for permitting decisions.

Another Formosa affiliate, FG LA LLC (hereinafter "Formosa-LA"), proposes to build a 2,400-acre megacomplex in St. James Parish's District 5.[130] If constructed, the perversely named "Sunshine Project" will permanently alter the landscape of the Parish. Formosa-LA plans to build in an area where residents earn low incomes and more than 90% of the nearest residents identify as Black.[131] Despite this, Formosa-LA claimed the closest "neighborhood" to the project site "is 90% white," referring to a census block with only two residents, according to a brief filed on behalf of RISE St. James and others by the legal nonprofit Earthjustice.[132] Another brief for the same petitioners notes that the alternative-site analysis that Formosa-LA submitted to LDEQ "was out of date and insufficient."[133] It further observed that, rather than critically reviewing the company's deficient alternative-site analysis, LDEQ merely summarized Formosa-LA's submission before

[127] PATTON ET AL., *supra* note 27, at 2, 28-30.
[128] *Id.* at 13.
[129] *Detailed Facility Report: Formosa Plastics Louisiana*, U.S. ENV'T PROT. AGENCY, https://echo.epa.gov/detailed-facility-report?fid=110000597444 (last visited Feb. 17, 2025); Lylla Younes, *A Louisiana Court Just Revived Plans for the Country's Biggest Plastics Plant*, GRIST (Jan. 23, 2024), https://grist.org/regulation/louisiana-court-revived-biggest-plastic-plant-formosa/; PATTON ET AL., *supra* note 27, at 37 (citing to the U.S. EPA's Enforcement and Compliance History Online (ECHO) website to find that "[t]he [Baton Rouge] site has been identified as a 'significant non-complier' under the Resource Conservation and Recovery Act since 2004, and it has over a decade's worth of 'unaddressed violations' of the Clean Air Act.").
[130] *Formosa Selects St. James Parish for $9.4 Billion Louisiana Project*, OPPORTUNITY LA. (Apr. 23, 2018), https://www.opportunitylouisiana.gov/news/formosa-selects-st-james-parish-for-9-4-billion-louisiana-project. This "megacomplex" is expected to comprise 14 facilities. Emilie Karrick Surrusco, *Cancer Alley Rises Up*, EARTHJUSTICE (Jan. 23, 2024), https://earthjustice.org/feature/cancer-alley-rises-up.
[131] EARTHJUSTICE, PETITION FOR ACTION REGARDING DEFICIENCIES IN THE LOUISIANA AND TEXAS CLEAN AIR ACT PROGRAMS BY ABUSING SIGNIFICANT IMPACT LEVELS, IN VIOLATION OF THE PREVENTION OF SIGNIFICANT DETERIORATION PERMITTING PROGRAM, NATIONAL AMBIENT AIR QUALITY STANDARDS, AND TITLE VI OF THE CIVIL RIGHTS ACT 19 (2023).
[132] Petitioners' Brief at 8, RISE St. James v. Louisiana Dep't of Env't Quality, No. 694029 (La. Dist. Ct. 11/05/20).
[133] Petitioners-Appellees' Original Brief at 30, RISE St. James v. Louisiana Dep't of Env't Quality, No. 2023-CA-0578 (La. Ct. App. 1st Cir. 10/2/23).

concluding that no alternative site would "offer more protection to the environment without unduly curtailing non-environmental benefits."[134]

One study estimated that the Sunshine Project could double or triple toxic chemical emissions in the area.[135] Formosa-LA's complex would be a major source of criteria pollutants, and the company is expected to emit "800 tons per year of almost two dozen different toxic air pollutants,"[136] including 7.7 tons per year of ethylene oxide.[137] These emissions will occur within one mile of St. Louis Academy,[138] which serves a student population that is 99% Black.[139] The project site is also located near other important sites for the community, including Mt. Calvary Baptist Church. In addition, Formosa-LA's planned megacomplex appears poised to affect numerous gravesites of people who were enslaved, some of whose descendants still live in the area.[140] Despite not yet having all the necessary permits,[141] the company's website announces that "activities at the site are underway."[142]

Community Opposition to Formosa's Sunshine Project

Significant community opposition to proposed projects, as in St. James Parish, should be a relevant factor in determining the need for a cumulative impacts analysis and establishing its proper scope.[143] "Formosa would be a death sentence for St. James Parish," longtime resident Sharon Lavigne has said.[144] District 5 is already choked with industry and faces one of the worst

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[134] Petitioners-Appellees' Original Brief, *supra* note 133, at 31.
[135] Younes, *supra* note 87.
[136] Petitioners' Brief, *supra* note 132, at 37.
[137] Younes, *supra* note 87; *see also* Petitioners' Brief, *supra* note 132, at 2 ("Formosa Plastics . . . would be among the largest sources of carcinogenic pollutants such as . . . ethylene oxide in the United States."). EPA has found ethylene oxide to cause cancer and other severe health impacts even with limited exposure. *See* ETHYLENE OXIDE, *supra* note 90, at 6, 38, 52; *see also supra* Part II(C).
[138] St. Louis Academy was formerly Fifth Ward Elementary School. ROLFES & KRAY, *supra* note 16, at 9.
[139] Consent Order at 5, United States v. St. James Parish School Board, No. 2:65-cv-16173 (E.D. La. 2017).
[140] COASTAL ENVIRONMENTS, INC., CTR. FOR CONST. RTS., CARTOGRAPHIC REGRESSION ANALYSIS OF CERTAIN TRACTS OF LAND LOCATED IN T. 11 S AND T. 12 S., R. 15 E. (SOUTHEASTERN LAND DISTRICT WEST OF THE MISSISSIPPI RIVER), ST. JAMES PARISH, LOUISIANA (2020); *see supra* Part II(A).
[141] *Louisiana Court Ruling Reverses Lower Court Decision and Upholds Air Permits for Formosa Plastics' Massive Petrochemical Complex in Cancer Alley*, EARTHJUSTICE (Jan. 19, 2024), https://earthjustice.org/press/2024/louisiana-court-ruling-reverses-lower-court-decision-and-upholds-air-permits-for-formosa-plastics-massive-petrochemical-complex-in-cancer-alley ("Formosa Plastics cannot begin construction without a federal wetlands permit from the U.S. Army Corps of Engineers").
[142] *The Sunshine Project*, FG LA LLC (FG), https://www.sunshineprojectla.com/ (last visited Feb. 17, 2025).
[143] *See infra* Part III.
[144] *Army Corps Receives More Than 5,500 Letters Demanding It Revoke Formosa Plastics' Permit*, CTR. FOR BIOLOGICAL DIVERSITY (Feb. 10, 2021), https://biologicaldiversity.org/w/news/press-releases/army-corps-receives-more-than-5500-letters-demanding-it-revoke-formosa-plastics-permit-2021-02-10/.

risks of cancer from toxic air pollution in the country.[145] Some residents want to leave but cannot: "[T]he price they would get for their home, were anyone interested in buying, has made moving impossible."[146] Environmental groups and grassroots organizations, notably RISE St. James, are at the forefront of the resistance to the Sunshine Project, organizing protests, community meetings, and educational campaigns, conducting local, national, and international advocacy, and filing lawsuits.[147] On occasion, community activism and legal battles have successfully blocked a facility, but when one disappears, another takes its place.[148]

If applied robustly and in good faith, the EPA's Framework should lead to the denial of permits for facilities like the Sunshine Project and prevent further concentration of polluting entities in overburdened communities like Districts 4 and 5. Indeed, conditions in St. James Parish illustrate the importance of comprehensive cumulative impacts analyses to inform environmental decision-making in Louisiana and throughout the United States. The Commenters support the Framework's identification of many key factors in cumulative impacts analysis, including historical discrimination and other social stressors; geographic and climate vulnerability; and aggregate and disproportionate chemical exposure.

III. Recommendations for Further Strengthening the Framework

The Commenters reiterate their support for the Framework's promotion of cumulative impacts analysis in environmental decision-making. In Part III, the Commenters provide recommendations for the purpose of further strengthening the Framework.

Wherever EPA's authority permits, the Framework should obligate EPA and other relevant agencies to consider cumulative impacts in environmental decision-making processes. The Framework currently contains no obligation for EPA to conduct cumulative impacts analysis

[145] Petitioners-Appellees' Original Brief, *supra* note 133, at 6; *see* HUM. RTS. WATCH, *supra* note 3, at 32 ("For decades, nearly every census tract in Cancer Alley has ranked in the top 5 percent nationally for cancer risk from toxic air pollution"); *see also supra* Part II(C).
[146] HUM. RTS. WATCH, *supra* note 3, at 42.
[147] *See, e.g.*, RISE ST. JAMES, *supra* note 1; Surrusco, *supra* note 130; Complaint, *supra* note 15, at 98 ("As they did with every other facility that sought to locate in the 4th and 5th Districts at this time, residents showed up in force to oppose the project."). In 2021, RISE St. James founder Sharon Lavigne won the Goldman Environmental Prize for her activism opposing Formosa's petrochemical project. *See 2021 Goldman Prize Winner Sharon Lavigne*, GOLDMAN ENV'T PRIZE, https://www.goldmanprize.org/recipient/sharon-lavigne/ (last visited Feb. 17, 2025).
[148] *See Louisiana Residents Celebrate Stopping South Louisiana Methanol's Petrochemical Complex*, EARTHJUSTICE (Sept. 9, 2022), https://earthjustice.org/press/2022/louisiana-residents-celebrate-stopping-south-louisiana-methanols-petrochemical-complex.

when making decisions,[149] and EPA retains discretion to determine when and whether to apply the Framework.[150] While flexible application of the Framework could foster productive engagement with communities, the Framework should require EPA to consider cumulative impacts in contexts where communities, such as St. James Parish, face disproportionate current or historic burdens.[151] Even if cumulative impacts analysis is not always dispositive, it should be obligatory for actions affecting overburdened communities, when setting standards for co-located facilities, and in all other feasible cases to inform agencies of the effects of their decisions.

While the Framework currently applies only to EPA actions,[152] we urge EPA to extend the Framework to agencies exercising the EPA's delegated authority,[153] including state environmental regulators, to the extent its legal authority allows. With countless permits issued nationwide by regulators exercising delegated authority, the Framework should consider methods for EPA to mandate cumulative impacts analysis in all decisions where EPA would conduct the analysis.[154] St. James Parish embodies the need for this mandate. Louisiana regulators pervasively underenforce state environmental protections, and communities in St. James and other parishes face mounting burdens as a result of LDEQ permitting clusters of petrochemical facilities in predominantly Black districts.[155] Litigation against EPA over Title VI has led the U.S. Department of Justice to indicate it will not impose or enforce Title VI cumulative-impact-analysis

[149] The Framework "is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity, against the Agency, its officers or employees, or any other person," and the EPA "retains discretion to use or deviate from [the Framework] as appropriate." FRAMEWORK, *supra* note 2, at 3. The Framework "does not address when it is relevant or consistent with law to use a cumulative impacts approach." *Id.*
[150] *Id.*
[151] Such communities could be identified via environmental justice mapping tools and/or community narratives.
[152] FRAMEWORK, *supra* note 2, at 3. ("This document is intended for the sole use of EPA employees and decision-makers.").
[153] *See, e.g.*, *Delegation of Clean Air Act Authority*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/caa-permitting/delegation-clean-air-act-authority (last visited Feb. 5, 2025) (discussing EPA's Clean Air Act delegation regime); *see also* 40 C.F.R. §§ 63.90-99.
[154] At minimum, the Commenters urge EPA to provide guidance, including best practices, and other support for state agencies to conduct cumulative impacts analysis.
[155] *See* Lilian S. Dorka, Letter Re: Administrative Closure EPA Complaint Nos. 01R-22-R6 and 04R-22-R6 (June 27, 2023), https://www.epa.gov/system/files/documents/2023-06/01R-22-R6%20and%2004R-22-R6%20Administrative%20Closure%20Letter%20for%20LDEQ%206.27.2023.pdf. EPA has, for instance, received complaints alleging civil rights violations by LDEQ in the latter's implementation of its air pollution control permit program, concerning, *inter alia*, LDEQ's issuance of contested permits to Denka and Formosa facilities. *Id.*; *see* Lisa Song & Lylla Younes, *EPA Calls Out Environmental Racism in Louisiana's Cancer Alley*, PROPUBLICA (Oct. 19, 2022, 6:30 AM), https://www.propublica.org/article/cancer-alley-louisiana-epa-environmental-racism; *see also* HUM. RTS. WATCH, *supra* note 3, at 82.

requirements in Louisiana unless further litigation restores such protections.[156] Moreover, LDEQ may set performance standards for new facilities.[157] LDEQ fails, however, to consider cumulative impacts. To ensure cumulative impacts are analyzed in every relevant context, the Commenters ask EPA to explore applying the Framework to all regulators exercising EPA's delegated authority.

The Framework should consider ways to respect community-held knowledge and alleviate the burden of participation on community members who engage with regulators. The Commenters commend the Framework's measures for meaningful community engagement.[158] Indeed, communities with environmental justice concerns hold valuable knowledge about both the problems caused by cumulative environmental burdens and possible solutions. For many years, such communities have been the subject of academic and agency-led studies and government public participation processes. In many cases, these communities have given their time and expertise for no remuneration, recognition, or attribution. Building on its adoption of the definition of "meaningful engagement" in EPA's Meaningful Engagement (ME) Policy,[159] the Framework can incorporate steps to ensure the goal of meaningful engagement is achieved in practice.[160]

To that end, EPA should identify ways to ensure that public participation processes respect community-held knowledge. As it implements the Framework, EPA should adopt ME Policy methods to facilitate community participation and to welcome diverse perspectives and backgrounds, such as selecting convenient meeting times and locations, securing childcare during

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[156] State of Louisiana v. U.S. Env't Prot. Agency, No. 2:23-CV-00692 (W.D. La. 2024); *Notice of Injunction in Louisiana v. EPA (W.D. La.)*, U.S. DEP'T OF JUST., https://www.justice.gov/crt/case-document/notice-injunction-louisiana-v-epa-wd-la (last visited Jan. 29, 2025); *Notice of Compliance with Permanent Injunction in Louisiana v. EPA et al*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/external-civil-rights/notice-compliance-permanent-injunction-louisiana-v-epa-et-al (last visited Jan. 30, 2025).

[157] *Delegation of EPA's Authority*, LA. DEP'T OF ENV'T QUALITY, https://deq.louisiana.gov/page/-delegation-of-epas-authority (last visited Jan. 29, 2025). EPA has "delegated LDEQ the authority to implement and enforce certain New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAPs) promulgated by EPA at 40 CFR 60, 61, and 63." *Id.*

[158] FRAMEWORK, *supra* note 2, at 9-14; U.S. ENV'T PROT. AGENCY, ACHIEVING HEALTH AND ENVIRONMENTAL PROTECTION THROUGH EPA'S MEANINGFUL ENGAGEMENT POLICY (2024) [hereinafter ME Policy]. The Commenters note the Framework relies on the draft "Meaningful Involvement Policy" but will cite to the final ME Policy. *See* U.S. ENV'T PROT. AGENCY, ACHIEVING HEALTH AND ENVIRONMENTAL PROTECTION THROUGH EPA'S MEANINGFUL INVOLVEMENT POLICY, PUBLIC REVIEW DRAFT (2023).

[159] FRAMEWORK, *supra* note 2, at 34 (defining meaningful engagement as involving "timely opportunities for members of the public to share information or concerns and participate in decision-making processes; [f]ully considering public input […]; [s]eeking out and encouraging the involvement of persons and communities affected by federal activities […] and [p]roviding technical assistance, tools, and resources to assist in facilitating meaningful and informed public participation"); *see also* ME Policy, *supra* note 158, at 4.

[160] *See generally* WE ACT FOR ENV'T JUST., COMMUNITY ENGAGEMENT BRIEF (2022).

meetings, and ensuring language accessibility.[161] The Framework should also instruct officials to consider methods to compensate participants for expenses incurred, as well as to remunerate them for their time and expertise.[162] Further, the Framework should promote the use of existing research, including reports and data from past community engagement efforts, to ensure that communities are not repeatedly asked to generate the same information.[163] Rather, engagement processes should focus on consultation with, and the priorities of, local residents. When appropriate, these communities should be recognized and their expertise cited along with the authors, researchers, and other experts. Given the toll of recounting traumatic experiences, regulators should also contemplate the mental health effects on community members.[164] The Framework could facilitate support for community members through methods such as holding small group discussions, providing access to mental health resources, and conducting trauma-informed interviews.

Relatedly, the Framework rightly aims to improve transparency with the public.[165] To ensure this goal is achieved in practice, the Framework can integrate additional concrete methods for increasing transparency. For example, the results of all studies and engagement processes should be publicized in the relevant languages in the participant communities.[166] The Framework should further emphasize the importance of timely exchanges of information between government officials and community members during all phases of a cumulative impacts analysis.[167] As it

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[161] *See* ME Policy, *supra* note 158, at 24-28, 34-41; *see also* WE ACT FOR ENV'T JUST., *supra* note 160, at 3-5.
[162] ME Policy, *supra* note 158, at 25 ("EPA may rely on certain authorities when covering costs associated with participating and considering compensation to the public for its time and expertise."); *see also* WE ACT FOR ENV'T JUST., *supra* note 160, at 4.
[163] ME Policy, *supra* note 158, at 20-21 (describing methods of obtaining information, including building on existing public participation efforts). Regulators should also refer to existing agency and academic research and resources produced by or with affected communities that document community experiences and concerns.
[164] Anxiety and trauma are often associated with experiences faced by members of communities with environmental justice concerns. *See generally* Shannon Elizabeth Bell et al., *Pipelines and Power: Psychological Distress, Political Alienation, and the Breakdown of Environmental Justice in Government Agencies' Public Participation Processes*, 109 ENERGY RSCH. & SOC. SCI., no. 103406, Jan. 2024, at 2, 8-9; Stephanie A. Malin et al., *Depressed Democracy, Environmental Injustice: Exploring the Negative Mental Health Implications of Unconventional Oil and Gas Production in the United States*, 70 ENERGY RSCH. & SOC. SCI., no. 101720, Sept. 2020, at 8.
[165] FRAMEWORK, *supra* note 2, at 10. The experience of St. James Parish illustrates the need for improved transparency in environmental decision-making. For example, RISE St. James only discovered the existence of ancestral burial grounds on the site of a proposed petrochemical facility through a public records request. *Graves of Enslaved People Found on Proposed Formosa Plastics Site*, *supra* note 24; *see supra* Parts II(A) and II(D). Further, a court has ruled the local Planning Commission and St. James Parish Council acted illegally by meeting privately with developers about a proposed chemical plant in 2019. *District Court Judge Rules that St. James Parish Violated State Law in Holding Secret Meetings over Proposed Chemical Plant*, TUL. ENV'T L. CLINIC (Jan. 8, 2025), https://static1.squarespace.com/static/5eed506b38da704895463871/t/677f03a85e28af171a015357/1736377256411/OML+Press+Release+2024-1-8+FINAL.pdf.
[166] *See* WE ACT FOR ENV'T JUST., *supra* note 160, at 5.
[167] *See* ME Policy, *supra* note 158, at 29-33.

implements the Framework, EPA should communicate clearly with affected communities about the processes for analyzing cumulative impacts and inform them about opportunities to engage.[168]

The Framework should ensure the geographic and temporal scope of cumulative impacts analysis corresponds with the experience of affected communities. The Commenters support the Framework's emphasis on the importance of proper scoping.[169] Within this process, the Framework should provide criteria for determining which communities to include in cumulative impacts analyses, as the scope and composition of the communities considered will influence EPA's assessment of cumulative impacts. In Louisiana, for instance, LDEQ has denied observing "higher cancer incidence over large areas of the industrial corridor between Baton Rouge and New Orleans."[170] Such a broad geographic scope overlooks the disparate rates of cancer occurring at more local levels.[171] Other states establish specific geographic scopes when identifying impacted communities. Minnesota's Frontline Communities Protection Act (FCPA), for example, defines "cumulative impacts" as "the impacts of aggregated levels of past and current air, water, and land pollution in a defined geographic area to which current residents are exposed."[172] The FCPA applies to permits for facilities located in or within one mile[173] of a designated environmental justice area,[174] among other locations, thus helping to ensure that the Act covers the most overburdened communities and minimizing agency discretion. Similarly, EPA should carefully evaluate the implications of the chosen geographic scope for cumulative impacts analysis in the Framework. Above all, EPA should endeavor to include all potentially impacted communities when scoping cumulative impacts analyses. Further, while gathering data and analyzing cumulative impacts, EPA should assess impacts at the most precise geographic increments possible to achieve a detailed understanding of the variation in how different communities are impacted.

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[168] *See id.* at 16.
[169] FRAMEWORK, *supra* note 2, at 18.
[170] HUM. RTS. WATCH, *supra* note 3, at 52-53; James Bruggers, *Q&A: Cancer Alley Is Real, And Louisiana Officials Helped Create It, Researchers Find,* INSIDE CLIMATE NEWS (Feb. 8, 2023), https://insideclimatenews.org/news/08022023/louisiana-cancer-alley/.
[171] *See* Terrell & St. Julien, *supra* note 5, at 1, 2; *see also* Dorka, *supra* note 10.
[172] MINN. STAT. § 116.065(1)(c) (2023).
[173] *Id.* § 116.065(2)(a).
[174] A term of art in the FCPA, "environmental justice area" is defined as any census tract where "40 percent or more of the population is nonwhite," "35 percent or more of the households have an income at or below 200 percent of the federal poverty level," or "40 percent or more of the population over the age of five has limited English proficiency;" or that is "located within Indian Country." *Id.* § 116.065(1)(e) (2023).

In terms of temporal scope, cumulative impacts analyses should include intergenerational equity, which recognizes that "all generations are partners caring for and using the Earth"[175] and emphasizes protection of the environment for future generations.[176] The Framework rightly acknowledges that health disparities associated with environmental burdens continue over generations.[177] It also discusses cumulative social stressors known as "weathering," which may drive racial health disparities and adverse health outcomes such as preterm birth, low birth weight, and infant mortality.[178] The Framework can further emphasize the importance of intergenerational equity by clarifying that a full analysis of cumulative impacts includes assessing the adverse impacts that are likely to affect not only the present but also the next generation.

The Framework should clarify that cumulative impacts analysis of environmental stressors and harms to human health can be a basis for denying permits. Many states have taken steps to incorporate cumulative impacts analysis into environmental decision-making.[179] For example, New Jersey law requires permit applicants proposing to locate facilities in overburdened communities to submit an environmental justice impact statement assessing environmental stressors the facility would cause.[180] If approving the permit for a new facility would "cause or contribute to adverse cumulative environmental or public health stressors" greater than those experienced by other applicable communities in the state, regulators must deny the permit, unless the facility serves a compelling public interest in the local community and health-protective conditions are imposed.[181]

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[175] Edith Brown Weiss, *Climate Change, Intergenerational Equity & International Law*, 9 VT. J. ENV'T L. 615, 616 (2008); *see also* Daniel Bertram, *'For You Will (Still) Be Here Tomorrow': The Many Lives of Intergenerational Equity*, 12 TRANSNAT'L ENV'T L. 121 (2023).
[176] Edith Brown Weiss, *supra* note 175, at 616, 619-20.
[177] FRAMEWORK, *supra* note 2, at 8.
[178] *Id.* at 9.
[179] As of July 2023, "22 states have developed or are in the process of developing legislation, mapping tools […], and guidance documents to incorporate cumulative impacts analysis into decision-making*."Id.* at 50.
[180] N.J. REV. STAT. § 13:1D-160(a) (2023); *see Environmental Justice Rules Frequently Asked Questions*, N.J. DEP'T OF ENV'T PROT., https://dep.nj.gov/wp-content/uploads/ej/docs/ej-rule-frequently-asked-questions.pdf (last visited Feb. 16, 2025).
[181] N.J. REV. STAT. § 13:1D-160(c) (2023). Regulators may also apply conditions to protect public health to permits for the expansion of an existing facility or the renewal of an existing facility's major source permit. *Id*. § 13:1D-160(d) (2023). In air quality regulation, Massachusetts has also adopted a process expressly empowering state environmental regulators to require that permit applicants "reduce, minimize, or mitigate cumulative impacts" as a condition of permit approval. 310 MASS. CODE REGS. 7.02(3)(c) (2024).

New York's environmental justice law, considered by some the "nation's strongest,"[182] similarly requires facilities seeking permits to report existing burdens on disadvantaged communities[183] and bars state environmental regulators from issuing a permit to any new project that would "cause or contribute more than a de minimis amount of pollution to a disproportionate pollution burden on [a] disadvantaged community."[184] Notably, New York law also requires denial of applications to modify or renew existing permits for projects that "would significantly increase existing disproportionate pollution burden on [a] disadvantaged community."[185] Following New Jersey's and New York's models, the Framework should require EPA to deny permits for facilities that could exacerbate cumulative impacts.[186] The Framework should similarly build on its support for health impact assessments by identifying them as grounds for denying permits for facilities that would compound existing public health harms.[187]

The Framework should further emphasize the role of mapping tools in cumulative impacts analysis. At all levels—EPA regions, states, and cities—mapping of cumulative impacts can help EPA identify communities burdened by multiple sources and validate the lived experience of affected populations.[188] Accordingly, the Framework should further elevate the role of mapping

[182] Michael B. Gerrard & Edward McTiernan, *New York Adopts Nation's Strongest Environmental Justice Law*, N.Y.L.J. (May 10, 2023), https://scholarship.law.columbia.edu/cgi/viewcontent.cgi?article=4954&context=faculty_scholarship.
[183] N.Y. ENV'T CONSERV. LAW § 70-0118(2)(a)-(b) (Consol. 2023). Regulators may choose not to require such a report for applications to renew or modify a permit "if the permit would serve an essential environmental, health, or safety need of the disadvantaged community for which there is no reasonable alternative." *Id.* § 70-0118(2)(b).
[184] *Id.* § 70-0118(3)(b).
[185] *Id.* § 70-0118(3)(c)-(d).
[186] Even in areas without extant facilities, the Framework should include a presumption that EPA should not permit new facilities that would have adverse cumulative impacts on communities' basic resources such as clean air and water. In denying an aquifer exemption request for an oil and gas injection well in Wyoming, for instance, EPA Region 8 emphasized the need to prioritize the aquifer supplying communities' drinking water over permitting the well. *See* FRAMEWORK, *supra* note 2, at 51. The Framework should explicitly provide that consideration of a single facility's prospective cumulative impacts can suffice for EPA to deny a permit for a proposed facility.
[187] The Framework describes the Chicago Department of Public Health's (CDPH) successful health impact assessment (HIA) that led CDPH to deny a permit for a proposed metal recycling facility. FRAMEWORK, *supra* note 2, at 54-55. After surveying the neighborhood around the facility's proposed site, CDPH determined that the local population had levels of certain chronic conditions above those of Chicago overall and that these elevated rates of disease were related to "the presence of past and current industry," effects the proposed facility would have exacerbated. *Id. See generally Health Impact Assessment Resources*, CTRS. FOR DISEASE CONTROL & PREVENTION (Feb. 14, 2024), https://www.cdc.gov/environmental-health-tracking/php/communications-resources/hia-resources.html (describing how data from CDC's Tracking Network can be used in HIAs).
[188] Scholars and activists use the term "sacrifice zone" to describe such acutely burdened fenceline communities. *See* STEVE LERNER, *supra* note 16, at 2-3. Sacrifice zones result from numerous social inequities, including discriminatory zoning decisions that often site polluting industries near low-income communities of color. *Id.* at 6.

tools, such as EPA's EJScreen,[189] which equip agencies to "characterize, visualize, and operationalize an understanding of disproportionate impacts."[190] Although the Framework refers to mapping tools used by states such as California and Washington,[191] EPA should detail *how* and *when* such tools must be used in decision-making, both in assessing potentially harmful facilities and in allocating resources to remedy adverse effects.[192]

IV. Conclusion

Consideration of cumulative impacts is critical for advancing environmental justice. For families like those of St. James Parish—who wish to work, learn, play, and worship in clean air on the banks of a safe, healthy river—regulators will fail their basic duty of protecting human health and the environment[193] if they do not weigh the history of compounding burdens that many communities bear. Regulators must recognize the toll on those who live each day amid facilities that make the most dangerous substances on Earth. For the reasons set forth above, the Commenters strongly support the EPA's Framework, which provides long overdue guidance for considering cumulative impacts. The Framework represents a vital step toward ensuring that environmental harms do not continue to accumulate in overburdened communities, and it could be strengthened further by the suggestions herein. EPA should act urgently to implement this Framework and consider cumulative impacts throughout its decision-making processes. Communities are holding their breath.

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[189] *EJScreen*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/ejscreen (last visited Feb. 11, 2025). As of February 11, 2025, EJScreen has been disabled on EPA's website; several environmental nongovernmental organizations have, however, compiled various environmental justice mapping tools, including a preserved version of EJScreen. *See Data + Screening Tools*, PUB. ENV'T DATA PARTNERS, https://screening-tools.com/ (last visited Feb. 16, 2025).
[190] Charles Lee, *A Game Changer in the Making? Lessons from States Advancing Environmental Justice Through Mapping and Cumulative Impact Strategies*, 50 ENV'T L. REP. 10203, 10205 (2020).
[191] FRAMEWORK, *supra* note 2, at 24.
[192] By helping decision-makers identify vulnerable and overburdened communities, cumulative impact mapping tools can "facilitate resource investment to promote health and sustainability in environmentally overburdened and disadvantaged communities." Lee, *supra* note 190, at 10210.
[193] *See Our Mission and What We Do*, U.S. ENV'T PROT. AGENCY, https://www.epa.gov/aboutepa/our-mission-and-what-we-do (last visited Feb. 16, 2025) ("The mission of EPA is to protect human health and the environment.").