BEFORE THE UNITED STATES ARMY CORPS OF ENGINEERS

PETITION TO HALT THE APPROVAL OF FOSSIL FUEL INFRASTRUCTURE PERMITS AS CONTRARY TO THE PUBLIC INTEREST AND FOR ASSOCIATED ACTIONS AND RULEMAKING

October 6, 2021

Submitted By

383 ENVIRONMENTAL JUSTICE, CLIMATE, CONSERVATION, PUBLIC HEALTH, INDIGENOUS, FAITH-BASED, AND COMMUNITY ORGANIZATIONS

"There is little time left to avoid setting the world on a dangerous, potentially catastrophic, climate trajectory….we face a climate crisis that threatens our people and communities, public health and economy, and, starkly, our ability to live on planet Earth….We must listen to science — and act….It is the policy of my Administration to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy…"

President Joe Biden, Tackling the Climate Crisis at Home and Abroad, Exec. Order No. 14,008, (Jan. 27, 2021)

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I. Executive Summary

The climate emergency is wreaking havoc on our nation and the world through devastating fires, droughts, heat waves, superstorms, sea level rise, and many other harms. President Joe Biden has pledged to follow the science and tackle the climate crisis with the urgency it demands, directing all federal agencies to take the actions necessary to avert the most catastrophic impacts, to redress environmental racism, to respect Tribal sovereignty and U.S. treaty obligations, and to advance climate justice. The science shows that warming must be kept below 1.5 degrees Celsius (°C) in order to avoid truly apocalyptic climate disruption, and that every additional increment of warming brings increasing devastation.

Because 85% of U.S. greenhouse gas emissions come from oil, gas, and coal, limiting warming means limiting fossil fuels. Because all phases of the fossil fuel lifecycle disproportionately harm Black, Brown, Indigenous and low-income communities, oil, gas, and coal must be phased out to address the systemic racism and energy violence entrenched in the nation's fossil fuel energy system.

Accordingly, Petitioners request that the U.S. Army Corps of Engineers ("Corps") exercise its regulatory authority in a manner consistent with existing law, science, and the President's directive to respond to the climate emergency and advance environmental justice. This petition requests that the Corps issue an immediate moratorium on the approval of permits for fossil fuel infrastructure projects under Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899 (RHA) as contrary to the public interest, and promulgate a rule based on the best available science that the issuance of fossil fuel infrastructure permits is contrary to the public interest and for that reason such permits will no longer be approved.[1] This petition further requests that the Corps revoke permits that have been illegally issued for fossil fuel infrastructure projects.

The Clean Water Act and RHA prohibit certain activities that damage our waters, wetlands, and environment unless permitted by the Corps. Section 404 of the Clean Water Act gives the Corps responsibility for permitting activities that involve the discharge of dredged or fill materials into U.S. waters. Section 10 of the RHA gives the Corps permitting responsibility for projects that impair navigable waters. 33 U.S.C. § 1344(a), (d); *id.* § 403. For categories of "similar" activities that "will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment," the Corps may issue a Nationwide Permit ("NWP")—a general permit that avoids the need for any further review of activities in the category. *See* 33 C.F.R. § 330.1(b), (g) (2021). The Corps issues individual permits under Clean Water Act Section 404 and RHA Section 10 for activities that do not qualify for an NWP.

[1] For the purposes of this petition, the term fossil fuel infrastructure projects includes, but is not limited to, pipelines, import and export terminals, storage facilities, refineries, power plants, and petrochemical plants and carbon capture projects attached thereto.

The Corps may not issue any permit under the Clean Water Act or RHA unless all of the regulatory criteria are met. Most relevant to this petition, the Corps must conduct a broad public interest review and may not issue any permit that is "contrary to the public interest." 33 C.F.R. § 320.4(a) (2021).

These individual and general permits are frequently sought, and obtained, for harmful fossil fuel infrastructure projects, such as pipelines, compressor stations, storage, transport, and export facilities, refineries, and petrochemical plants. For example, the Dakota Access Pipeline relied on Nationwide Permit 12 ("NWP 12"), which authorizes certain "activities required" for the construction of water crossings for oil and gas pipelines, the construction and expansion of pipeline substation facilities, and the construction of access roads for the construction and maintenance of pipelines without any further review. The Corps has also recently issued individual permits to projects that would massively expand the transport and consumption of fossil fuels and petrochemical products, such as the Formosa Plastics petrochemical complex in Louisiana and the Enbridge Line 3 pipeline in Minnesota, and is considering whether to issue permits for other proposed infrastructure projects with enormous climate implications, such as the Sea Port Oil Terminal (SPOT) Project off the coast of Texas.

The science is clear that new fossil fuel infrastructure projects are contrary to the public interest. The climate crisis is already causing devastating impacts from rising seas and coastal erosion; more destructive hurricanes and wildfires; increasing heatwaves, droughts, and floods; food and water insecurity; and the collapse of ecosystems. The overwhelming scientific consensus has conclusively determined that without significant, rapid emissions reductions, warming will exceed 1.5°C and will result in catastrophic damage around the world. Every fraction of additional warming will worsen these harms, threatening people's lives, health, safety, and livelihoods; as well as threaten the economy and national security for this generation and future generations.[2]

Fossil fuels disproportionately harm Black, Brown, Indigenous and low-income communities in many ways and at every phase of their lifecycle. These projects are often approved by the federal government in direct violation of U.S. treaty obligations to Tribal nations, respect for Tribal sovereignty, and statutory requirements concerning Tribal cultural resources and properties mandated by well-established U.S. laws. Fossil fuel infrastructure projects are also very often concentrated in and directly harm communities that are already overburdened with air and water pollution, disproportionately high health risks and harms, destruction of natural resources, depression of property values, and other negative impacts.[3] The unequal siting of dirty fossil fuel

[2] See, e.g., Intergovernmental Panel on Climate Change, Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty, (V. Masson-Delmotte, et al. eds., 2018), https://www.ipcc.ch/sr15/ [hereinafter *IPCC, Global Warming of 1.5°C*].

[3] *See, e.g.* Robert D. Bullard et al., Toxic Wastes and Race at Twenty: 1987-2007 (2007), http://www.ejnet.org/ej/twart.pdf; Adrian Wilson et al., Coal Blooded: Putting Profits Before People, NAACP, Indigenous Environmental Network & Little Village Environmental Justice Organization

infrastructure and its resulting pollution has led to disproportionate and serious health harms particularly to communities of color.[4] Moreover, the harms of climate change—driven by these fossil fuel projects—most directly and severely harm these very same communities.[5]

Three quarters of global greenhouse emissions and 85% of U.S. greenhouse pollution comes from fossil fuels.[6] In order to limit warming to 1.5°C, fossil fuel production must be limited to no more than can be burned and still stay below that threshold. This is known as the "carbon budget." Unfortunately, oil, gas, and coal producers currently plan to blow the carbon budget and greatly exceed 1.5°C. As detailed in a landmark report, fossil fuel producers currently plan to extract at least 120% more fossil fuels than can be burned and still limit warming to 1.5°C.[7] This discrepancy is known as the "production gap." In order to keep within the 1.5°C limit, ***the world's fossil fuel production must decrease by roughly 6% per year between 2020 and 2030.***[8] Most developed oil and gas fields and coal mines must be shut down before their reserves are fully depleted to keep warming to below 1.5°C.[9]

The United States is the world's largest oil and gas producer and third largest coal producer, and a dominant driver of global fossil fuel expansion.[10] Absent major shifts in policy, U.S. production of both oil and gas is projected to increase more than twice as much as any other country by 2030.[11] In total, the U.S. fossil fuel industry is on track to account for 60% of the world's projected growth in oil and gas production this decade.[12] If U.S. fossil fuel expansion is not immediately halted, it will make it impossible to limit temperature rise to1.5°C and preserve a livable planet.

(2012), https://naacp.org/resources/coal-blooded-putting-profits-people; Lesley Fleischman & Marcus Franklin, Fumes Across the Fence-Line: The Health Impacts of Air Pollution from Oil & Gas Facilities on African American Communities, Clean Air Task Force and NAACP (2017), https://www.catf.us/wp-content/uploads/2017/11/catf-rpt-naacp-4.21.pdf.

[4] Tim Donaghy & Charlie Jiang, Greenpeace, Gulf Coast Center for Law & Policy, Red, Black & Green Movement, and Movement for Black Lives, Fossil Fuel Racism (2021), https://www.greenpeace.org/usa/wp-content/uploads/2021/04/Fossil-Fuel-Racism.pdf.

[5] U.S. EPA, Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts (2021), https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf.

[6] U.S. Global Change Research Program, Impacts, Risks, and Adaptation in the United States, Fourth National Climate Assessment, Vol. II 60 (2018), https://nca2018.globalchange.gov/ [hereinafter *Fourth National Climate Assessment, Vol. II*].

[7] SEI, IISD, ODI, E3G, and UNEP, The Production Gap Report: 2020 Special Report (2021), http://productiongap.org/2020report.

[8] *Id.*

[9] Oil Change International, Drilling Toward Disaster: Why U.S. Oil and Gas Expansion Is Incompatible with Climate Limits (2019), http://priceofoil.org/drilling-towards-disaster. For more information on how greenhouse gas emissions are contrary to the public interest, please refer to the supporting appendix.

[10] *Id.*

[11] Ploy Achakulwisut & Peter Erickson, Trends in fossil fuel extraction: Implications for a shared effort to align global fossil fuel production with climate limits, Stockholm Environment Institute Working Paper (April 2021), www.sei.org/publications/trends-in-fossil-fuel-extraction/ at Figure 3.

[12] Oil Change International, *supra* note 9.

The construction of new fossil fuel infrastructure projects, including but not limited to pipelines, import and export terminals, storage facilities, refineries, power plants, and petrochemical plants, is also inconsistent with meeting a 1.5°C limit.[13] Research shows that the committed carbon emissions from *existing* fossil fuel infrastructure in the energy and industrial sectors exceed the carbon budget for limiting warming to 1.5°C, meaning that no new fossil infrastructure can be built and much existing infrastructure must be ***retired early*** to avoid catastrophic climate harms.[14]

Given these realities, the expansion of fossil fuel consumption through new infrastructure to extract, transport, store and process fossil fuels is entirely incompatible with the public interest.

President Biden has acknowledged the science and directed federal agencies to take all necessary action to address the climate emergency. For example, in his January 27, 2021 Executive Order on Tackling the Climate Crisis at Home and Abroad, he wrote:

> There is little time left to avoid setting the world on a dangerous, potentially catastrophic, climate trajectory….we face a climate crisis that threatens our people and communities, public health and economy, and, starkly, our ability to live on planet Earth….We must listen to science — and act….It is the policy of my Administration to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy….[15]

In January 2021, President Biden issued a Memorandum to the heads of all executive departments and agencies emphasizing that this administration will prioritize making "respect for Tribal sovereignty and self-governance, commitment to fulfilling Federal trust and treaty responsibilities to Tribal Nations, and regular, meaningful, and robust consultation with Tribal Nations cornerstones of Federal Indian policy."[16] President Biden has also pledged to redress environmental racism, stating further "[w]e must deliver environmental justice in communities all across America," and directed agencies including the Corps to "make achieving environmental justice part of their missions."[17]

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[13] Dan Tong et al., Committed emissions from existing energy infrastructure jeopardize 1.5 °C climate target, 572 Nature 373 (2019); Alexander Pfeiffer et al., Committed emissions from existing and planned power plants and asset stranding required to meet the Paris Agreement, 13 Environmental Research Letters 054019 (2018).

[14] Tong et al., *supra* note 13.

[15] Tackling the Climate Crisis at Home and Abroad, Exec. Order No. 14,008, 86 Fed. Reg. 7,619 (Jan. 27, 2021), https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad.

[16] President Joseph R. Biden, Jr., Memorandum on Tribal Consultation and Strengthening Nation-to-Nation Relationships (Jan. 26, 2021).

[17] *Id*. Likewise, Exec. Order. 12,898 issued by President Clinton requires agencies "[t]o the greatest extent practicable and permitted by law . . . [to] make achieving environmental justice part of [their] mission by identifying and addressing . . . disproportionately high and adverse human health or environmental effects

By recognizing that fossil fuel infrastructure approvals are contrary to the public interest and taking the actions requested in this petition, the Corps will begin to exercise its regulatory authority in a manner consistent with existing law, science, and the President's directive to respond to the climate and environmental justice crises.

There are many other criteria and procedures the Corps must follow when issuing Clean Water Act permits, and many reasons, beyond inadequate consideration of climate impacts in public interest reviews, why permit approvals are unlawful. Public interest organizations and Indigenous and frontline groups are challenging permits for fossil fuel infrastructure projects around the country on many such grounds.[18] We expect each of these challenges to succeed on its own individual merits, and do not re-argue those claims here. This petition focuses solely on the public interest evaluation that the Corps must undertake.

II. Notice of Petition

Pursuant to the right to petition the government guaranteed by the Administrative Procedure Act, including Title 5 of the United States Code, Sections 553(e) and 555(b), and the First Amendment to the Constitution of the United States,[19] the undersigned organizations hereby petition the U.S. Army Corps of Engineers to:

(1) Institute an immediate moratorium on the issuance of Clean Water Act Section 404 and Rivers and Harbors Act of 1899 Section 10 permits for fossil fuel infrastructure projects;[20]

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of [their] activities on minority populations and low-income populations." Federal Actions to Address Environmental Justice in Minority and Low Income Populations, Exec. Order 12,898, 3 C.F.R. § 651.17 (1994) (Feb. 11, 1994).

[18] *See, e.g., Ctr. for Biological Diversity v. Scott*, 4:21-cv-00047 (D. Mont. May 3, 2021) (challenge to Nationwide Permit 12); *Red Lake Band of Chippewa Indians v. U.S. Army Corps of Eng'rs*, 1:20-cv-03817 (D.D.C. Dec. 24, 2020) (challenge to the Corps' issuance of CWA Section 404 and RHA Section 10 permits for Line 3 pipeline); associated case *Friends of the Headwaters v. U.S. Army Corps of Eng'rs*, 1:21-cv-00189 (D.D.C. Jan. 21, 2021) (Line 3 challenge); *Memphis Cmty. Against Pollution, Inc. v. U.S. Army Corps of Eng'rs*, 2:21-cv-2201 (W.D. Tenn. Jan. 4, 2021) (Byhalia pipeline challenge); *Delaware Riverkeeper Network v. U.S. Army Corps of Eng'rs*, 1:20-cv-04824 (D.N.J. Apr. 22, 2020) (challenge to Dock 2 LNG transfer facility); *Shrimpers and Fishermen of the RGV v. U.S. Army Corps of Eng'rs*, 20-60281 (5th Cir. Mar. 20, 2020) (Rio Bravo LNG terminal and pipeline challenge); *Ctr. for Biological Diversity v. U.S. Army Corps of Engineers*, 1:20-cv-00103 (D.D.C. Jan. 15, 2020) (challenge to Formosa Plastics petrochemical complex, dismissed without prejudice January 1, 2021 after the Corps suspended its permits; the Corps has now determined a full Environmental Impact Statement is required, as Plaintiffs in that case had argued).

[19] *See also United Mine Workers v. Illinois State Bar Ass'n*, 389 U.S. 217, 222 (1967) (right to petition for redress of grievances is among most precious of liberties without which the government could erode rights).

[20] For the purposes of this petition, the term fossil fuel infrastructure projects includes, but is not limited to, pipelines, import and export terminals, storage facilities, refineries, power plants, and petrochemical plants, and carbon capture projects attached thereto.

(2) Promulgate a rule to be codified at Title 33, Code of Federal Regulations, Section 320.5 that fully considers the climate and environmental justice harms of fossil fuel infrastructure projects and the best available scientific information, including from the Intergovernmental Panel on Climate Change (IPCC), the U.S. Global Change Research Program, and other literature cited herein, declaring that permits for fossil fuel infrastructure projects, including but not limited to pipelines, compressor stations, storage, transport, and export facilities, refineries, and petrochemical plants, and carbon capture projects attached thereto, are contrary to the public interest and therefore shall not be issued pursuant to Section 404 of the Clean Water Act, Section 10 of the Rivers and Harbors Act of 1899, and Title 33, Code of Federal Regulations, Section 320.4;
(3) Pursuant to Title 33, United States Code, Section 1344(e) and Title 33, Code of Federal Regulations, Section 330.1(b), revoke Nationwide Permit 12 as contrary to the public interest; and
(4) Pursuant to Title 33, United States Code, Section 1344 and Title 33, Code of Federal Regulations, Sections 325.7(c) & (d), suspend and revoke individual permits for fossil fuel infrastructure projects that have been unlawfully issued because they are contrary to the public interest.

Due the grave urgency of the climate crisis, Petitioners request an acknowledgement of receipt and initial response to this petition within one week. Should the Corps unlawfully withhold or unreasonably delay its response to this petition, Petitioners may resort to the judiciary to compel agency action. 5 U.S.C. § 706(1).

III. Legal Framework

Congress enacted the Clean Water Act to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). The Clean Water Act specifies that it is "the national goal that the discharge of pollutants into the navigable waters be eliminated." 33 U.S.C. § 1251(a)(1). To accomplish these goals, Section 404 of the Clean Water Act generally prohibits the discharge of any pollutant—including dredged or fill material—into waters of the United States unless authorized by a permit. *Id*. §§ 1311(a), 1344(a)–(e).

Section 404 of the Clean Water Act gives the Corps primary responsibility for permitting activities that involve the discharge of dredged or fill materials into U.S. waters. *Id*. § 1344(a), (d). The Corps oversees the Section 404 permitting process and must also comply with guidelines promulgated by the U.S. Environmental Protection Agency (EPA), which are incorporated into the Corps' own regulations. *Id.* § 1344(b)(1); 33 C.F.R. §§ 320.4(b)(4), 325.2(a)(6). The objective of these "404(b)(1) guidelines," set forth at 40 C.F.R. Part 230, is to prevent unacceptable adverse impacts to the nation's aquatic ecosystems from the discharge of dredged or fill material. 40 C.F.R. § 230.1(c) (2021).

Section 10 of the RHA declares it unlawful to build "any wharf, pier, dolphin, boom, weir, breakwater, bulkhead, jetty, or other structures in any port, roadstead, haven, harbor, canal, navigable river, or other water of the United States, outside established harbor lines, or where no harbor lines have been established," or "to excavate or fill, or in any manner to alter or modify

the course, location, condition, or capacity of" any navigable water without a permit from the Corps. 33 U.S.C. § 403; 33 C.F.R. § 320.2(b). *See also United States v. Hernandez*, 979 F. Supp. 70, 76 (D.P.R. 1997) (the Act is "an instrument for the enforcement of environmental policy," prohibits a number of activities that impair ports, channels, and other navigable waters).

Consistent with the goal of eliminating water pollution, the Clean Water Act prohibits the issuance of any permit for projects that do not meet specific environmental criteria and, critically, are contrary to the public interest. In many cases, projects that trigger the need to apply for a dredge and fill permit under Section 404 of the Clean Water Act also require a permit under Section 10 of the RHA.

A. Nationwide Permits

Under the Clean Water Act, Congress established a default prohibition on the discharge of pollutants into U.S. waters. 33 U.S.C. § 1311(a) ("the discharge of any pollutant by any person shall be unlawful."). This broad prohibition is designed to achieve the overall purpose of the Act, which is to restore the "chemical, physical, and biological integrity of the Nation's waters" and *eliminate* water pollution. *Id.* § 1251(a), (a)(1). The Act provides for limited exceptions to the general prohibition.

One such exception is available for categories of "similar" activities that "will cause only minimal adverse environmental effects when performed separately and will have only minimal cumulative adverse effect on the environment," for which the Corps may issue a Nationwide Permit ("NWP"). 33 U.S.C. § 1344(e)(1); 33 C.F.R. § 322.2(f) (2021). To determine whether an NWP may issue, the Corps must comply with a number of environmentally-protective prohibitions. For example, the Corps may not issue a permit for the discharge of dredged or fill material that will cause or contribute to violations of state water quality standards, jeopardize species listed under the Endangered Species Act, or violate marine sanctuary requirements. 40 C.F.R. § 230.10(b) (2021). Further, the Corps may not approve permits that "will cause or contribute to significant degradation of the waters of the United States." 40 C.F.R. § 230.10(c). The Corps must also demonstrate that steps have been taken to "minimize potential adverse impacts" of any discharge on the aquatic ecosystem. *Id.* § 230.10(d).

NWPs are a type of general permit that offer a streamlined alternative to the individual permitting process and can be used to satisfy the permit requirements of the Clean Water Act and the RHA. *See* 33 C.F.R. § 330.1(b), (g). NWPs are issued for up to five years, at which point they are either reissued or expire. 33 U.S.C. § 1344(e)(2); 33 C.F.R. § 330.6(b) (2021). The Corps also has the power to revoke an NWP. 33 C.F.R. § 330.1(b).

NWPs are "designed to regulate with little, if any, delay or paperwork certain activities having minimal impacts." *Id.* § 330.1(b). Once an NWP is issued, specific projects that meet the terms and conditions of that NWP may proceed without obtaining an individual permit. Projects permitted under an NWP are not subject to public participation and do not undergo the more rigorous, site-specific environmental and public interest review individual permits do. *See* 33 C.F.R. § 323.3(a) (2021). "In most cases," projects meeting the specific terms and conditions of

an NWP may be constructed without even notifying the Corps. *See* 33 C.F.R. § 330.1(c), (e)(1). In some cases, applicants must submit a preconstruction notification to the relevant Corps district engineer and hold off on construction until the district engineer verifies that the project meets the NWP's terms and conditions. *See id.* §§ 330.1(e)(1), 330.6(a)(1). If the district engineer determines that the project does not comply with the NWP's terms and conditions, they must deny verification; the applicant may then seek authorization under the individual permitting process. *See id.* § 330.6(a)(2). If the district engineer simply fails to respond to the preconstruction notification within 45 days, then generally "[t]he permittee may presume that his project qualifies for the NWP." *Id.* § 330.1(e)(1).

B. Individual Permits

The Clean Water Act also authorizes the Corps to issue individual, site-specific permits for the discharge of dredged or fill material into waters of the United States on a case-by-case basis, 33 U.S.C. § 1344(a), but it must overcome the Act's presumption against discharges and the destruction of wetlands. Similarly, the RHA authorizes the Corps to issue individual site-specific permits for activities affecting navigable waters, 33 U.S.C. § 403, but the intention of Congress in creating that regime was to protect those waters. *See Zabel v. Tabb*, 430 F.2d 199, 211 (5th Cir. 1970) *cert. denied*, 401 U.S. 910 (1971) ("[t]he intent of the three branches has been unequivocally expressed: The Secretary must weigh the effect a dredge and fill project will have on conservation before he issues a permit lifting the Congressional ban."). As emphasized in *Buttrey v. United States*, which upheld the Corps' denial of a Clean Water Act Section 404 permit for a development project, "the Corps shall begin its analysis of a proposed project with the presumption that the 'unnecessary alteration or destruction of [wetlands] should be discouraged as contrary to the public interest.'" 33 C.F.R. § 320.4(b)(1). This presumption is "*very* strong." 690 F.2d 1170, 1180 (5th Cir. 1982), *cert. denied*, 461 U.S. 927 (1983) (emphasis in original);[21] *see also Hough v. Marsh*, 557 F. Supp. 74 (D. Mass. 1982) (stating in its review of the regulations applying to dredge and fill permits "[a]t the outset they announce a general presumption against discharge.").

To overcome this presumption, the Corps may only issue individual permits if certain environmentally-protective criteria are met. These criteria include provisions designed to protect wetlands; fish and wildlife; water quality; historic, cultural, scenic, and recreational values; coastal zones; marine sanctuaries; floodplain management; water supply and conservation; and economics, 33 C.F.R. § 320.4(b), all of which are severely impacted by climate change as discussed in more detail *infra*. *See also* 40 C.F.R. § 230.10(b)-(d).

Along with the obligation to demonstrate it has met these criteria, the Corps may not issue an individual permit under Clean Water Act Section 404 unless there is no practicable alternative to the proposed discharge that would have "less adverse impact" on the aquatic ecosystem. 40 C.F.R. § 230.10(a). Where the discharge is proposed for a special aquatic site, such as a wetland,

[21] In *Buttrey*, the court upheld the Corps' denial of an individual permit as contrary to the public interest, rejecting the applicant's assertion that the permit should be issued because "the 40 acres at stake in this lawsuit are a 'mere flyspeck' in relation to the entire [] watershed." 690 F.2d at 1180.

and is not water dependent, "practicable alternatives that do not involve special aquatic sites are presumed to be available, unless clearly demonstrated otherwise." *Id*. § 230.10(a)(3).

C. Public Interest Test

The Department of the Army, which encompasses the Corps, may not issue any permit, including individual and nationwide permits, until completing an in-depth "public interest review," evaluating "the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest." 33 C.F.R. § 320.4(a). A decision whether a permit is in the public interest "should reflect the national concern for both protection and utilization of important resources." *Id.* A permit may not be granted if it is found to be "contrary to the public interest." *Id.*

The Corps' public interest review must consider the whole project and the construction and operational impacts of all of its components, including for example pipelines, storage facilities, petrochemical plants, and export terminals, and carbon capture projects attached thereto. It is hard to imagine any fossil fuel infrastructure project that has any utility independent of its upstream and downstream components, but they are certainly, at a minimum, relevant cumulative impacts that the Corps must consider, as the court held in *Columbia Riverkeeper v. U.S. Army Corps of Eng'rs*, No. 19-6071, 2020 U.S. Dist. LEXIS 219535, at *22-23 (W.D. Wash. Nov. 23, 2020), *motion for reconsideration denied*, 2020 U.S. Dist. LEXIS 231611 (W.D. Wash. Dec. 9, 2020), *appeal dismissed*, 2021 U.S. App. LEXIS 22400 (9th Cir., Jun. 16, 2021).

In *Columbia Riverkeeper*, the court reviewed the Corps' issuance of Clean Water Act Section 404 and RHA Section 10 permits to the Kalama Manufacturing and Marine Export Facility. The court rejected the Corps' contention that it need only evaluate whether one portion of the Kalama project that necessitated a Corps permit (the export terminal) was in the public interest and that it need not consider the impacts of the associated methanol refinery, which the Corps argued was within the jurisdiction of the Department of Energy. The court disagreed, noting that "[u]nder 33 C.F.R. § 320.4(a)(1), the Corps is directed to consider evaluation of 'cumulative impacts,' and so consideration of the impacts of the Methanol Refinery was required." *Id.* at *22; *see also Fox Bay Partners v. U.S. Army Corps of Eng'rs*, 831 F. Supp. 605, 610 (N.D. Ill. 1993) (upholding the Corps' denial of Clean Water Act Section 404 and Section 10 RHA permits to a developer despite some noted beneficial effects given the project's adverse and cumulative effects on the environmental and "substantial public opposition to the proposal.").

Another requirement of the Corps' public interest review is that "[t]he benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments." 33 C.F.R. § 320.4(a)(1). As the court reiterated in *Columbia Riverkeeper* in striking down the Corps' public interest review, the Corps cannot hold up the benefits of a project without evaluating and balancing its detriments. In that case, the Corps "arbitrarily and capriciously relied on benefits of the Project in worldwide reduction of greenhouse gases without conducting an assessment of the detriments worldwide." *Columbia Riverkeeper*, 2020 U.S. Dist. LEXIS 219535 at *22-23; *see also Hough v. Marsh*, 557 F. Supp. 74 at 86 (striking down a public interest review in part because the Corps considered the project's positive economic

benefits but "sidestepped any consideration of adverse economic effects" and did not consider cumulative effects from existing and future projects).

In conducting this balancing and deciding whether the permitted project is in the public interest, the Corps must consider "[a]ll factors which may be relevant to the proposal…including the cumulative effects thereof... conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people." 33 C.F.R. § 320.4(a)(1);[22] *see also Buttrey*, 690 F.2d at 1180 ("This review considers virtually all aspects of a project."). That ecological concerns "dominate" the public interest review "may, and should[,]" drive the Corps' decision on permits. *United States v. Members of the Estate of Boothby*, 16 F.3d 19, 23 (1st Cir. 1994).

Further, the Corps must consider the following "general criteria" in conducting the public interest review: (1) the "relative extent of the public and private need for the proposed structure or work;" (2) "[w]here there are unresolved conflicts as to resource use, the practicability of using reasonable alternative locations and methods to accomplish the objective of the proposed structure or work;" and (3) the "extent and permanence of the beneficial and/or detrimental effects which the proposed structure or work is likely to have on the public and private uses to which the area is suited." 33 C.F.R. § 320.4(a)(2)(i)-(iii).

This public interest test, by design, is broad in scope, and born out of Congress' intent that the Corps use its power to deny permits in pursuit of environmental protection. The Corps' duty to protect the environment has been evident throughout the history of the Clean Water Act Section 404 and RHA Section 10 programs. In 1968, the Corps promulgated regulations requiring that engineers deciding whether to issue a permit under the RHA consider "the effects of permitted activities on the public interest including effects upon water quality, recreation, fish and wildlife, pollution, our natural resources, as well as the effects on navigation." 33 C.F.R. § 209.330(a) (1967). Subsequently, the House Committee on Government Operations emphasized that the Corps "should instruct its district engineers . . . to increase their emphasis on how the work will affect *all aspects of the public interest*, including not only navigation but also conservation of natural resources, fish and wildlife, air and water quality, esthetics, scenic view, historic sites, ecology, and other public interest aspects of the waterway."[23] The Fifth Circuit characterized the purpose of the public interest test as being to:

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[22] The regulation's list of factors to be considered is illustrative, not exhaustive; *see Water Works & Sewer Bd. v. United States Dep't of Army*, 983 F. Supp. 1052, 1075 n17 (N.D. Ala. 1997) ("This is not an exhaustive list, but solely an indicator of the factors that the Corps may find relevant to consider."); *Hough*, 557 F. Supp. at 81 ("This [public interest] provision recites a non-exhaustive list of some sixteen factors . . . .").

[23] U.S. House Committee on Government Operations, Our Waters and Wetlands: How the Corps of Engineers Can Help Prevent Their Destruction and Pollution, H. R. Rep. No. 91-917, (1970), at 5 (emphasis added).

> deny that which might have been granted routinely five, ten, or fifteen years ago before man's explosive increase made all, including Congress, aware of civilization's potential destruction from breathing its own polluted air and drinking its own infected water and the immeasurable loss from a silent-spring-like disturbance of nature's economy.

Zabel v. Tabb, 430 F.2d at 201. In response, the Corps "issued regulations interpreting its statutory authority as empowering it to take into account a full range of economic, social, and environmental factors." *United States v. Alaska*, 503 U.S. 569, 581-82 (1992); Regulatory Programs of the Corps of Engineers, 42 Fed. Reg. 37,122 (Jul. 19, 1977). These regulations broadened the Corps' consideration of many factors beyond the agency's previous myopic focus on navigation and extended the public interest test to permits issued under the Clean Water Act as well as the RHA. 42 Fed. Reg. 37,122 (Jul. 19, 1977); 33 C.F.R. § 320.4(a) (1) (expressly applying public interest test to all Department of the Army ("DA") permits).

In sum, Congress, agency regulations, and courts have made clear that the Corps must consider the full scope of environmental factors and impacts of a project when deciding whether a permit is in the public interest and may be issued. Undeniably, when considering permits for fossil fuel infrastructure projects, the Corps must consider all aspects of their contribution to climate change and resulting harm.[24]

IV. The Approval of Clean Water Act Section 404 and RHA Section 10 Permits for Fossil Fuel Infrastructure is Contrary to the Public Interest

The approval of fossil fuel infrastructure projects will cause additional climate and environmental justice harm that society cannot afford. The scientific evidence is overwhelming that every facet of the public interest, including those factors specifically enumerated in the non-exhaustive list provided by 33 C.F.R. § 320.4, will be harmed by the approval of fossil fuel infrastructure projects and the years of greenhouse pollution they will produce. The approval of these projects not only adds to the severe ongoing harm from climate change, but will also make it impossible to limit warming to 1.5°C, and thus impossible to avoid truly apocalyptic damages. This is because the continued operation of existing fossil fuel infrastructure alone will produce warming in excess of 1.5°C. Thus, there is no room in the carbon budget for new fossil fuel approvals, and existing infrastructure must be retired early to meet our climate commitments. For these reasons, the "careful weighing" of the public interest, which requires the Corps to consider the "benefits which reasonably may be expected to accrue" against these projects' "reasonably foreseeable detriments," can only lead to one conclusion: the catastrophic impacts of these

[24] Petitioners are mindful of the provisions of the Natural Gas Act with respect to liquified natural gas (LNG) terminals and interstate gas pipelines. Nothing in those provisions, however, interferes with the Corps' responsibility to take the petitioned actions. *See, e.g.* 15 U.S.C. 717b(e)(1) ("Except as provided in this Act, nothing in this Act is intended to affect otherwise applicable law related to any Federal agency's authorities or responsibilities related to LNG terminals.") And to the degree that a deadline set by a FERC schedule pursuant to 15 U.S.C. 717n for a final decision on a Corps permit as were to fall within the requested moratorium on Corps permitting, the Corps should simply deny the permits in accordance with FERC's timeline.

projects on our environmental, cultural, social, and economic systems overwhelmingly outweigh any purported benefits they might confer.

A. The Science Shows that New Fossil Fuel Infrastructure Adds to Severe Ongoing Harms and is Incompatible with Limiting Warming to No More than 1.5°C and Avoiding Catastrophic Climate and Environmental Justice Harms

The climate emergency, caused primarily by fossil fuels, poses an existential threat to every aspect of society. The warming climate has already led to more destructive wildfires, stronger hurricanes, worsening droughts, floods, and coastal erosion from rising seas. From the spread of disease, to destabilizing food and water security and the unraveling of natural ecosystems, the climate crisis already is killing people across the nation and around the world and is costing the U.S. economy billions in damages every year. The vast and ever-growing scientific literature documenting these findings has been set forth in a series of authoritative reports from the IPCC, U.S. Global Change Research Program, and other institutions.[25] The harms from fossil fuel extraction and climate disruption are not felt equally, but instead fall first and worst on Black, Brown, Indigenous, and other communities of color, as well as low-income and other frontline communities.[26]

The overwhelming scientific consensus has definitively concluded that without limits on fossil fuel production and deep and rapid emissions reductions, warming will exceed 1.5°C and will result in catastrophic damage throughout the country and the world.[27] Every fraction of additional warming above 1.5°C will worsen these harms, threatening lives, health and safety, livelihoods, the environment, economy, and national security for this and future generations.[28] In 2015 the nations of the world recognized that limiting warming to 1.5°C is necessary to avoid catastrophic and irreversible changes to ecosystems and communities and agreed to use best efforts to implement measures to achieve that goal in the Paris Agreement to the United Nations Framework Convention on Climate Change ("Paris Agreement").[29]

Three quarters of global greenhouse emissions and 85% of U.S. greenhouse pollution comes from fossil fuels.[30] In order to limit warming to 1.5°C, fossil fuel production must be limited to

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[25] U.S. Global Change Research Program, Climate Science Special Report: Fourth National Climate Assessment, Vol. I (2017), https://science2017.globalchange.gov/ [hereinafter *Fourth National Climate Assessment, Vol. I*]; Fourth National Climate Assessment, Vol. II, *supra* note 6; IPCC, Global Warming of 1.5°C, *supra* note 2; Intergovernmental Panel on Climate Change, Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change, (V. Masson-Delmotte et al. eds., 2021), https://www.ipcc.ch/report/ar6/wg1/ [hereinafter *IPCC, Climate Change 2021*].

[26] U.S. EPA, Climate Change and Social Vulnerability in the United States, *supra* note 5; *See also* Donaghy & Jiang, *supra* note 4, and references collected therein.

[27] IPCC, Global Warming of 1.5°C, *supra* note 2; IPCC, Climate Change 2021, *supra* note 25.

[28] IPCC, Global Warming of 1.5°C, *supra* note 2; IPCC, Climate Change 2021, *supra* note 25.

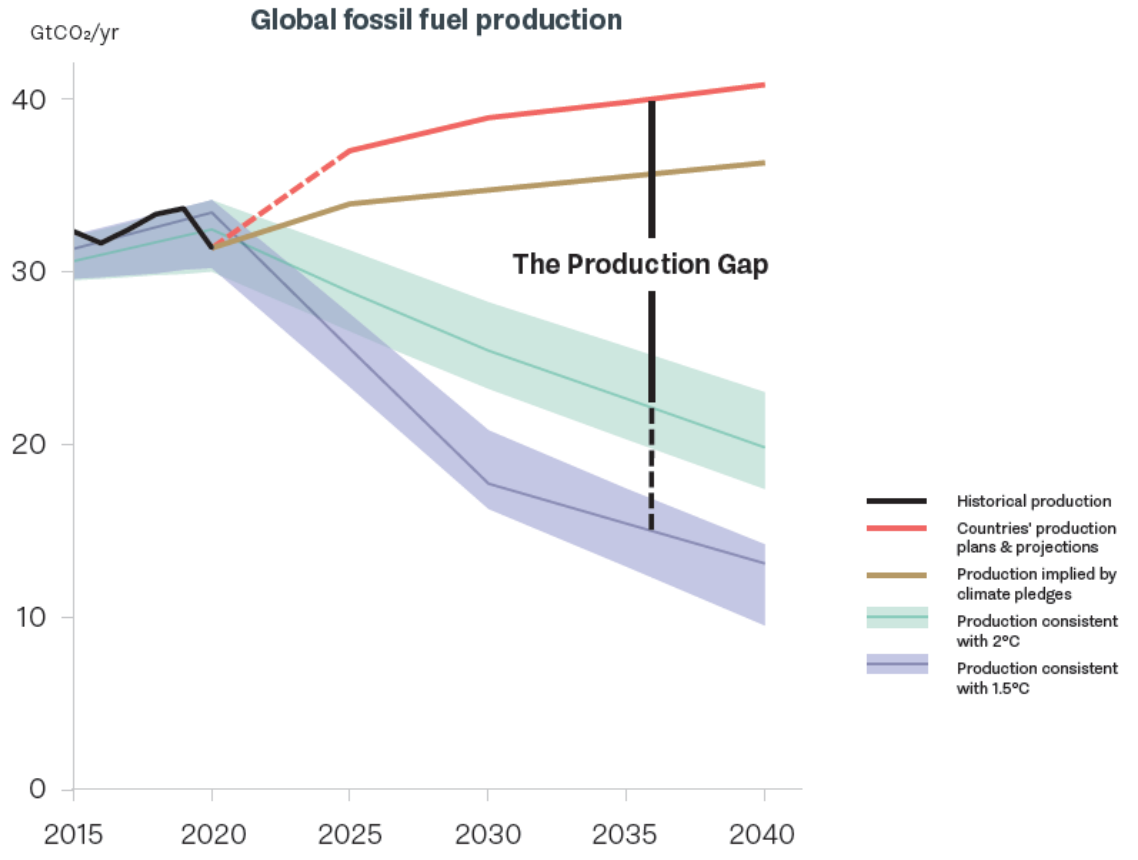
[29] Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, T.I.A.S. No. 16-1104, https://www.state.gov/16-1104/.

[30] Fourth National Climate Assessment, Vol. II, *supra* note 6, at 60.

no more than can be burned and still stay below that threshold. This is known as the "carbon budget." Unfortunately, oil, gas, and coal producers currently plan to blow the carbon budget and greatly exceed 1.5°C. As detailed in a landmark report, fossil fuel producers currently plan to extract at least 120% more fossil fuels than can be burned and still limit warming to 1.5°C.[31] This discrepancy is known as the "production gap," and illustrated in Figure 1.

Figure 1: Figure 2.1 from Production Gap Report[32]

Global fossil fuel production under four pathways, 2015–2040. This figure is adapted from the 2019 Production Gap Report, updated to show actual and estimated 2015–2020 values (black line). For the 1.5°C and 2°C pathways, the median (purple and green lines) and 25th to 75th percentile range (shaded areas) are shown. Note that the modelled pathways for production consistent with 1.5°C and 2°C have not been harmonized to recent actual data (black line); consequently, the median values for the 1.5°C- and 2°C-consistent pathways appear above the estimated actual production in 2020. For comparability with other emissions-based analyses, the production gap is presented in terms of the CO_2 emissions that will result from the combustion of extracted coal, oil, and gas, in units of gigatonnes of CO_2 ($GtCO_2 = 10^9\ tCO_2$).



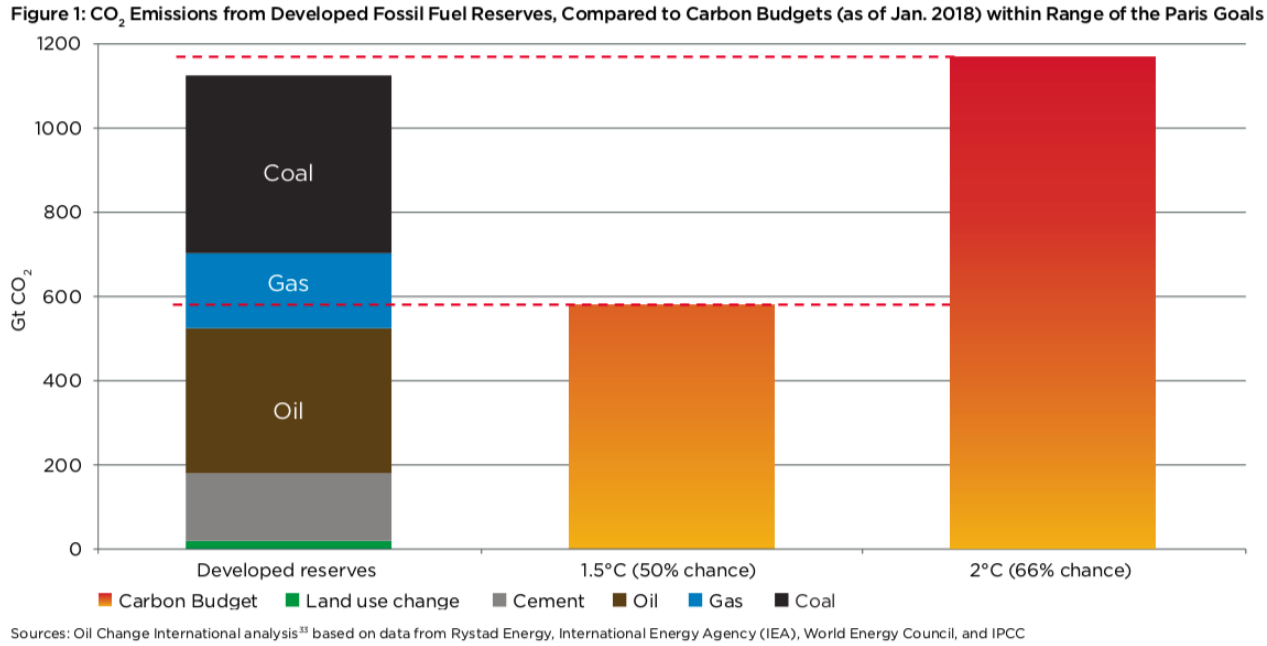
Stated another way, the world ***must decrease*** fossil fuel production by roughly 6% per year between 2020 and 2030 to limit warming to 1.5°C. Fossil fuel producers are instead planning and

[31] SEI, IISD, ODI, E3G, and UNEP, *supra* note 7.
[32] *Id.* at 14, Fig. 2.1.

projecting an average annual increase of 2%, which by 2030 would result in more than double the production consistent with the 1.5°C limit.[33]

A separate but consistent analysis has shown that there is enough oil, gas, and coal in already developed fields and mines globally to exceed the 1.5°C limit.[34] Therefore, most developed oil and gas fields and coal mines must be shut down before their reserves are fully depleted to keep warming to 1.5°C.

Figure 2: From Drilling Towards Disaster.[35]



The United States is the world's largest oil and gas producer and third largest coal producer, and a dominant driver of global fossil fuel expansion.[36] Absent major shifts in policy, U.S. production of both oil and gas is projected to increase more than twice as much as any other country by 2030.[37] In total, the U.S. fossil fuel industry is on track to account for 60% of the world's projected growth in oil and gas production this decade.[38] If U.S. fossil fuel expansion is not immediately halted, it will make it impossible to meet the 1.5°C limit and preserve a livable planet.

Unsurprisingly given this reality, other researchers have separately demonstrated that construction of new fossil fuel infrastructure projects, including but not limited to pipelines,

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[33] *Id.*
[34] Oil Change International, *supra* note 9.
[35] *Id.* at 11, Fig. 1.
[36] *Id.*
[37] Achakulwisut & Erickson, *supra* note 11, at Figure 3.
[38] Oil Change International, *supra* note 9.

import and export terminals, storage facilities, refineries, power plants and petrochemical plants, and carbon capture projects attached thereto, is also inconsistent with meeting the 1.5°C limit.[39] Research shows that the committed carbon emissions from *existing* fossil fuel infrastructure in the energy and industrial sectors exceed the carbon budget for limiting warming to 1.5°C, meaning that no new fossil infrastructure can be built and much existing infrastructure must be ***retired early*** to avoid catastrophic climate harms.[40]

The need to end new fossil fuel infrastructure approvals has been acknowledged by leaders around the world. Upon the release of the Working Group I contribution to the IPCC's Sixth Assessment Report on August 9, 2021, U.N. Secretary António Guterres said "This report must sound a death knell for coal and fossil fuels, before they destroy our planet….There must be no new coal plants built after 2021…. Countries should also end all new fossil fuel exploration and production…."[41] Fatih Birol, Executive Director of the International Energy Agency (IEA), said upon the release of the IEA's climate report in May 2021: "If governments are serious about the climate crisis, there can be no new investments in oil, gas and coal, from now – from this year."[42]

President Biden himself has acknowledged the science and directed federal agencies to take all necessary action. For example, in his January 27, 2021 Executive Order on Tackling the Climate Crisis at Home and Abroad, he wrote:

> There is little time left to avoid setting the world on a dangerous, potentially catastrophic, climate trajectory….we face a climate crisis that threatens our people and communities, public health and economy, and, starkly, our ability to live on planet Earth….We must listen to science — and act….It is the policy of my Administration to organize and deploy the full capacity of its agencies to combat the climate crisis to implement a Government-wide approach that reduces climate pollution in every sector of the economy….[43]

President Biden has also pledged to redress environmental racism, stating further "[w]e must deliver environmental justice in communities all across America," and directed agencies including the Corps to "make achieving environmental justice part of their missions."[44] As

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[39] Tong et al., *supra* note 13; Christopher J. Smith et al., Current fossil fuel infrastructure does not yet commit us to 1.5 °C warming, 10 Nature Communications 101 (2019); Pfeiffer et al., *supra* note 13.
[40] Tong et al., *supra* note 13.
[41] United Nations Secretary-General, *Secretary-General's statement on the IPCC Working Group 1 Report on the Physical Science Basis of the Sixth Assessment*, Aug. 9, 2021, https://www.un.org/sg/en/content/secretary-generals-statement-the-ipcc-working-group-1-report-the-physical-science-basis-of-the-sixth-assessment.
[42] Fiona Harvey, *No new oil, gas or coal development if world is to reach net zero by 2050, says world energy* body, GUARDIAN, May 18, 2021, https://www.theguardian.com/environment/2021/may/18/no-new-investment-in-fossil-fuels-demands-top-energy-economist.
[43] Exec. Order No. 14,008, *supra* note 15.
[44] *Id*. Likewise, Exec. Order. 12,898 issued by President Clinton requires agencies "[t]o the greatest extent practicable and permitted by law . . . [to] make achieving environmental justice part of [their] mission by

discussed further below, the harms from all phases of the fossil fuel lifecycle are not experienced equally, but fall first and worst on Black, Brown, Indigenous and low-income communities.

To meet these global and national goals of limiting warming to 1.5°C and combatting the climate crisis without delay, the Corps must do its part by ending the approval of new permits for fossil fuel infrastructure and revoking permits issued contrary to law.

B. New Fossil Fuel Infrastructure Will Result in Catastrophic Harm That Is Contrary to the Public Interest

In recent years, even as the climate emergency has deepened, the Corps has continued to approve fossil fuel infrastructure projects, willfully ignoring the resulting damage to our climate and focusing on a narrow subset of supposed benefits. By donning blinders and truncating the scope of its review, the Corps has argued, in effect, that permitting an entire new generation of fossil fuel projects that are inconsistent with maintaining a livable planet and environmental justice is somehow in the public interest. Yet the public interest test is designed to prevent precisely this absurd result.

The public interest test requires the Corps to fully and fairly consider the contribution of a project "and its intended use" to the climate crisis. 33 C.F.R. § 320.4(a). The Corps must consider the contribution of all phases of each project to the already horrific and ongoing climate catastrophe. The Corps must consider that the construction of new fossil fuel infrastructure will make it impossible to stay below the 1.5°C warming threshold established in the Paris Agreement.

As detailed below, across all categories of the public interest test, the climate consequences of new fossil fuel infrastructure project approvals are contrary to the public interest. As the United States grapples with rising sea levels, unprecedented droughts, devastating wildfires and catastrophic hurricane activity, all caused or worsened by climate change, there is simply no rational basis upon which the Corps can conclude that a permit for any new fossil fuel infrastructure is in the public interest.[45]

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identifying and addressing . . . disproportionately high and adverse human health or environmental effects of [their] activities on minority populations and low-income populations." Exec. Order 12,898,*supra* note 17.

[45] We note that some advocates have urged the U.S. federal and other governments to apply a "Climate Test" when approving infrastructure projects, and to deny approvals if the project would not be consistent with the pollution budget for maintaining a safe climate. While this frame is still useful for a variety of project approvals, it is not helpful for fossil fuel infrastructure project approvals, since as discussed above, any new fossil fuel infrastructure is inconsistent with limiting warming to 1.5°C. Thus, every time the Corps applies a climate test analysis to a fossil fuel infrastructure project, the answer will always be the same: no new infrastructure project is compatible with avoiding climate catastrophe.

i. Environmental justice

The permitting of new fossil fuel infrastructure projects undermines environmental justice. Fossil fuel infrastructure projects disproportionately harm Black, Brown, Indigenous and low-income communities, and perpetuate the systemic racism and energy violence entrenched in the nation's fossil fuel energy system.[46] Fossil fuel infrastructure projects are very often concentrated in and directly harm communities of color and low-income communities that are already overburdened with air and water pollution, disproportionately high health risks and harms, destruction of natural resources, depression of property values, and other negative impacts.[47] The unequal siting of dirty fossil fuel infrastructure and its resulting pollution has led to disproportionate and serious health harms particularly to communities of color.[48] For example, Black people in the U.S. have 1.54 times the exposure to particulate matter[49] compared to the overall population, while populations of color have 1.28 times higher burden than the general population.[50]

Further, many new fossil fuel infrastructure projects, including some of the longest and most controversial pipelines, cross Indigenous lands and waters and harm resources and access that Tribes depend on to exercise rights to fish, hunter, gather, and engage in other subsistence and cultural activities. These projects have proceeded without the federal government's full compliance with numerous statutory and regulatory requirements designed to ensure these key factors are properly evaluated, including under the National Environmental Policy Act and the National Historic Preservation Act. And these projects proceed without the free, prior and informed consent of Tribes[51] and in violation of legal rights protected by numerous treaties signed with the U.S. government.

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[46] Donaghy & Jiang, *supra* note 4.

[47] *See* Bullard et al., *supra* note 3; Wilson et al., *supra* note 3; U.S. Environmental Protection Agency, EJ Screening Report for the Clean Power Plan (2015), https://archive.epa.gov/epa/sites/production/files/2016-04/documents/ejscreencpp.pdf; Emanuele Massetti et al., Environmental Quality and the U.S. Power Sector: Air Quality, Water Quality, Land Use and Environmental Justice, ORNL/SPR-2016/772 (2017), https://info.ornl.gov/sites/publications/files/Pub60561.pdf; PSE Healthy Energy, Natural gas power plants in California's disadvantaged communities (April 2017), https://www.psehealthyenergy.org/wp-content/uploads/2017/04/CA.EJ_.Gas_.Plants.pdf.

[48] Donaghy & Jiang, *supra* note 4.

[49] An air pollutant linked to w wide variety of health harms including respiratory conditions, heart attacks, and premature death. See U.S. Environmental Protection Agency, Health and Environmental Effects of Particulate Matter (PM), https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm (last visited Aug. 30, 2021); *see also* K. Vohra et al., Global mortality from outdoor fine particulate pollution generated by fossil fuel combustion: Results from GEOS-Chem, 195 Envtl. Research 110754 (2021).

[50] Ihab Mikati et al., Disparities in distribution of particulate matter emission sources by race and poverty status, 108 American Journal of Public Health 480 (2018), https://ajph.aphapublications.org/doi/10.2105/AJPH.2017.304297.

[51] UN General Assembly, *United Nations Declaration on the Rights of Indigenous Peoples : resolution / adopted by the General Assembly*, 2 October 2007, A/RES/61/295, available at: https://www.refworld.org/docid/471355a82.html [accessed 23 September 2021] (while not yet "endorsing

Additionally, the harms of climate change—which are primarily driven by fossil fuel projects—most directly and severely harm these very same communities.[52] A 2021 EPA analysis concluded that communities of color are particularly vulnerable to the greatest impacts of climate change, including heath harms, heat waves, poor air quality, and flooding.[53] For example, with 2°C (3.6°F) of global warming, Black Americans are 34% more likely to currently live in areas with the highest projected increases in childhood asthma diagnoses and 40% more likely to currently live in areas with the highest projected increases in extreme temperature related deaths. With 2°C (3.6°F) of global warming, Hispanic and Latino individuals are 43% more likely to currently live in areas with the highest projected reductions in labor hours due to extreme temperatures.

There is an overwhelming public interest in preventing and redressing environmental racism and promoting environmental justice, which requires ending new fossil fuel production and infrastructure. As President Biden declared in Executive Order 14,008, "[w]e must deliver environmental justice in communities all across America," and he directed agencies including the Corps to "make achieving environmental justice part of their missions."[54]

ii. The needs and welfare of the people and general environmental concerns

The IPCC Assessment Reports, Congressionally-mandated U.S. National Climate Assessments, and tens of thousands of studies make clear that fossil-fuel driven climate change is a "code red for humanity,"[55] and that every additional ton of CO_2 and fraction of a degree of temperature rise matters. As warned by the IPCC, "every tonne of CO_2 emissions adds to global warming."[56] The 2018 IPCC *Special Report on Global Warming of 1.5°C* quantified the devastating climate impacts that would occur at 2°C versus 1.5°C and underscored that even a half degree of temperature rise would cause catastrophic damages harming every facet of the public interest. These widespread harms at 2°C versus 1.5°C include many more deadly heatwaves including an additional 23% of the world's population exposed to severe heat waves, intensified droughts and flooding; 10 centimeters of additional sea level rise within this century exposing 10 million more people to flooding; a greater risk of triggering the collapse of the Greenland and Antarctic ice sheets with resulting multi-meter sea level rise; 1.5 to 2.5 million more square kilometers of thawing permafrost area with the associated release of methane, a highly potent greenhouse gas; a tenfold increase in the probability of ice-free Arctic summers; a higher risk of heat-related and ozone-related deaths and the increased spread of mosquito-borne diseases such as malaria and dengue fever; reduced yields and lower nutritional value of staple crops like maize, rice, and wheat; a doubling of the number of people exposed to climate change-induced increases in water

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the UNDRIP, the U.S. has agreed to support the Declaration," USAID, https://www.usaid.gov/environmental-policy-roadmap/indigenous-peoples).

[52] Donaghy & Jiang, *supra* note 4

[53] U.S. EPA, *supra* note 4.

[54] Exec. Order No. 14,008, *supra* note 15. Likewise, E.O. 12,898 issued by President Clinton requires agencies "[t]o the greatest extent practicable and permitted by law . . . [to] make achieving environmental justice part of [their] mission by identifying and addressing . . . disproportionately high and adverse human health or environmental effects of [their] activities on minority populations and low-income populations." Exec. Order 12,898, *supra* note 17.

[55] United Nations Secretary-General, *supra* note 41.

[56] IPCC, Climate Change 2021, *supra* note 25, at SPM-37.

stress; and up to several hundred million more people exposed to climate-related risks and susceptible to poverty by 2050.[57]

For the U.S., the most recent Fourth National Climate Assessment prepared pursuant to the Global Change Research Act (GCRA)[58] quantified the widespread, intensifying, and long-lived harms from coast to coast from continued fossil fuel pollution including more frequent heat waves, floods, and intensified droughts across the country; soaring air and ocean temperatures; coastal flooding from sea level rise and increasing storm surge; declining food and water security; accelerating species extinction risk; melting Alaskan sea ice and glaciers; ocean acidification along our coasts; and the collapse of coral reefs.[59] A robust body of attribution studies has established that human-caused climate change has not only intensified many recent extreme weather events, but that some extreme weather events could not have happened without human-induced climate change.[60]

In the U.S., fossil fuel pollution and resulting climate harms are already causing hundreds of thousands of premature deaths each year, and this toll will escalate absent the rapid phase-out of fossil fuels. The fine particulate pollution from fossil fuel combustion alone causes an estimated one in ten deaths each year in the U.S., totaling 355,000 premature deaths in 2018.[61] Compared to limiting temperature rise to 1.5°C, warming of 2°C will cause an estimated 153 million more premature deaths worldwide due to increased exposure to fine particulate matter and ozone, including 130,000 more premature deaths in Los Angeles and 120,000 in the New York metropolitan area alone.[62] Another study estimated that every 4,434 metric tons of CO_2 added to the atmosphere in 2020—equivalent to the lifetime emissions of 3.5 average Americans—will cause one excess death globally through 2100.[63] The implications of this finding are that failing to limit temperature rise to 1.5°C and instead allowing 2°C warming will cost 169 million additional lost lives.[64]

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[57] IPCC, Global Warming of 1.5°C, *supra* note 2, at Summary for Policymakers.

[58] The National Assessment is meant to be the preeminent U.S. synthesis of climate change science. The GCRA specifies that the Assessment is to be made available to all federal agencies and branches of the government for use in formulating policy on global warming pursuant to other statutory responsibilities and obligations. 15 U.S.C. §§ 2936, 2938(b)(1),(2).

[59] Fourth National Climate Assessment, Vol. I, *supra* note 25; Fourth National Climate Assessment, Vol. II, *supra* note 6.

[60] Stephanie C. Herring et al., Explaining extreme events of 2016 from a climate perspective, 99 Bulletin of the American Meteorological Society S1 (2017), http://www.ametsoc.net/eee/2016/2016_bams_eee_low_res.pdf. The Bulletin of the American Meteorological Society has published an annual attribution study compendium since 2011.

[61] Karn Vohra et al., Global mortality from outdoor fine particle pollution generated by fossil fuel combustion: Results from GEOS-Chem, 195 Environmental Research 110754 (2021), https://www.sciencedirect.com/science/article/abs/pii/S0013935121000487.

[62] Drew Shindell et al., Quantified, localized health benefits of accelerated carbon dioxide emissions reductions, 8 Nature Climate Change 291 (2018), https://www.nature.com/articles/s41558-018-0108-y

[63] R. Daniel Bressler, The mortality cost of carbon, 12 Nature Communications 4467 (2021).

[64] The difference between the carbon budget needed to limit warming to 1.5°C versus 2°C is 750 Gt CO_2, based on the IPCC Sixth Assessment (see IPCC, Climate Change 2021, *supra* note 25 at Table SPM.2).

iii. Safety and public health

Climate change threatens public safety, health and well-being, with particular harms to children, older adults, communities of color, low-income communities, immigrant groups, and persons with disabilities and pre-existing medical conditions.[65] The authoritative Lancet Commission on Health and Climate Change called climate change "the biggest global health threat of the 21st century"[66] and warned that climate change is causing a global medical emergency that "threatens to undermine the last half century of gains in development and global health."[67] More than 200 health journals have called on governments to take emergency action to limit warming to 1.5°C, warning that the "[t]he greatest threat to global public health is the continued failure of world leaders to keep the global temperature rise below 1.5°C."[68] In the U.S., the health costs of air pollution from fossil fuel combustion and climate change are estimated to already exceed $800 billion per year and will become much more expensive without rapid action to curb fossil fuel pollution.[69]

Health risks from climate change include increased exposure to heat waves, floods, droughts, and other extreme weather events; increases in infectious diseases; decreases in the quality and safety of air, food, and water; displacement; and stresses to mental health and well-being.[70] For example, heat is the leading cause of weather-related deaths in the U.S., and one third of heat-related deaths in the U.S. between 1991 and 2018 are attributable to climate change.[71] Extreme heat is projected to increase future mortality on the scale of thousands to tens of thousands of additional premature deaths per year across the U.S. during this century.[72] Warming temperatures are also increasing human exposure to insect-borne diseases as ticks, mosquitoes and other vectors become active earlier in the season and expand northward. Cases of Lyme

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With each 4,434 metric tons of CO_2 estimated to result in one death, the additional 750 Gt CO_2 emitted with 2°C versus 1.5°C of temperature rise equates to 169 million additional deaths.

[65] Fourth National Climate Assessment, Vol. II, *supra* note 6, at 548; U.S. Global Change Research Program, The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment (2016) [hereinafter *USGCRP, Impacts of Climate Change on Human Health*].

[66] Nick Watts et al., The 2018 report of the *Lancet* Countdown on health and climate change: shaping the health of nations for centuries to come, 392 The Lancet 2479, 2482 (2018).

[67] Nick Watts et al., Health and climate change: policy responses to protect public health, 386 The Lancet 1861, 1861 (2015).

[68] Lukoye Atwoli et al., Call for emergency action to limit global temperature increases, restore biodiversity, and protect health, 374 BMJ (2021), https://www.bmj.com/content/374/bmj.n1734.

[69] Medical Society Consortium on Climate and Health, The Costs of Inaction: The Economic Burden of Fossil Fuels and Climate Change on Health in the United States 5 (2021), https://medsocietiesforclimatehealth.org/wp-content/uploads/2021/05/CostofInactionReport-May2021.pdf.

[70] Fourth National Climate Assessment, Vol. II, *supra* note 6, at 540; USGCRP, Impacts of Climate Change on Human Health, *supra* note 65.

[71] A.M. Vicedo-Cabrera et al., The burden of heat-related mortality attributable to recent human-induced climate change, 11 Nature Climate Change 492 (2021), https://www.nature.com/articles/s41558-021-01058-x.

[72] USGCRP, Impacts of Climate Change on Human Health, *supra* note 65, at 51.

disease in the U.S. projected to increase by 20% at 2°C of temperature rise,[73] while cases of West Nile disease are projected to more than double by 2050, resulting in approximately $1 billion per year in hospitalization costs and premature deaths.[74]

iv. Conservation and fish and wildlife values

Climate change is causing widespread harm to life across the planet, disrupting species' distribution, timing of breeding and migration, physiology, vital rates, and genetics, and harming the ecosystem processes that support basic human needs.[75] Climate change-related local extinctions are already widespread[76] and species extinction risk will accelerate with continued carbon pollution. One million animal and plant species are now threatened with extinction, with climate change as a primary driver.[77] On our current emissions trajectory, one third or more of animal and plant species are projected to go extinct in the next 50 years.[78] At 2°C versus 1.5°C of warming, species' extinction risk will increase dramatically, leading to a doubling of the number of vertebrate and plant species losing more than half their range, and a tripling for invertebrate species.[79]

Vulnerable ecosystems such as coral reefs and Arctic sea ice ecosystems are already in crisis. Coral reefs are projected to decline by a further 70-90% with 1.5°C of warming; at 2°C, coral reef ecosystems will suffer a near total collapse with projected declines of more than 99%[80] with cascading harms to the thousands of marine species and millions of people in the U.S. that depend on reefs. In the Alaskan Arctic, summer sea ice area and thickness have decreased by 40 percent during the past several decades,[81] with each metric ton of CO_2 emissions causing a

[73] Igor Dumic & Edson Severnini, 'Ticking bomb': the impact of climate change on the incidence of Lyme disease, 2018 Canadian Journal of Infectious Diseases and Medical Microbiology Article 5719081 (2018), 10.1155/2018/5719081.
[74] Fourth National Climate Assessment, Vol. II, *supra* note 6, at 552.
[75] Rachel Warren et al., Increasing impacts of climate change upon ecosystems with increasing global mean temperature rise, 106 Climatic Change 141 (2011); Brett R. Scheffers et al., The broad footprint of climate change from genes to biomes to people, 354 Science 719 (2016).
[76] John J. Wiens, Climate-related local extinctions are already widespread among plant and animal species, 14 PLoS Biology e2001104 (2016).
[77] Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, IPBES secretariat, Bonn, Germany (2019), available at https://ipbes.net/global-assessment
[78] Cristian Román-Palacios & J.J. Wiens, Recent responses to climate change reveal the drivers of species extinction and survival, 117 PNAS 4211 (2020).
[79] IPCC, Global Warming of 1.5°C, *supra* note 2, at Summary for Policymakers.
[80] *Id.*
[81] Walter N. Meier et al., Arctic sea ice in transformation: A review of recent observed changes and impacts on biology and human activity, 51 Rev. of Geophysics 185 (2014); Fourth National Climate Assessment, Vol. I, *supra* note 25, at 29, 57, 303; Fourth National Climate Assessment, Vol. II, *supra* note 6, at 1192-1193.

sustained loss of three square meters of summer sea ice area.[82] Limiting warming to 1.5°C is necessary to allow some summer sea ice to survive[83] to support Native Alaskan subsistence communities as well as polar bears, walruses, and other sea-ice dependent wildlife facing extinction due to rapid ice loss.

Cold-water fish like trout and salmon are projected to disappear from large portions of their current geographic range when warming causes water temperature to exceed their thermal tolerance limits. Species that are isolated in habitats near thermal tolerance limits (like fish in Great Plains streams) or that occupy rare and vulnerable habitats (like alpine wetlands) are threatened with extinction in the near future.[84] Further, disruptions to water flows from intensified droughts and reduced winter snowpack due to climate change could lead to significant lowering of water levels in streams, rivers, lakes, and wetlands, harming their functioning and biodiversity.[85]

v. Flood hazards, shore erosion and accretion

Climate change is increasing flooding risk and damages to communities across the U.S. due to more extreme precipitation events, intensified hurricanes and storm surge, and rising sea levels. As warmer air holds more moisture, heavy rainfall and snowfall events are increasing in frequency and intensity in most regions of the U.S.,[86] with the number of extreme precipitation events projected to rise by two to three times under a higher emissions scenario.[87] Climate change is also increasing the destructive power of hurricanes by increasing their intensity, rainfall and storm surge.[88] Because hurricanes are fueled by heat, warming ocean temperatures are increasing the strength of Atlantic hurricanes[89] and allowing them to intensify more quickly.[90] During 2016 to 2019, the U.S. suffered the longest streak of Category 5 hurricanes on

[82] Dirk Notz & Julienne Stroeve, Observed Arctic sea ice loss directly follows anthropogenic CO_2 emission, 354 Science 747 (2016), https://science.sciencemag.org/content/354/6313/747/tab-pdf.
[83] Carl-Friedrich Schleussner et al., Science and policy characteristics of the Paris Agreement temperature goal, 6 Nature Climate Change 827 (2016).
[84] N. LeRoy Poff et al., Pew Center on Global Climate Change, Aquatic Ecosystems and Global Climate Change: Potential Impacts on Inland Freshwater and Coastal Wetland Ecosystems in the United States (2002), http://www.c2es.org/publications/aquatic-ecosystems-and-climate-change.
[85] William R. Moomaw et al., Wetlands in a changing climate: science, policy and management, 38 Wetlands 183 (2018), https://link.springer.com/article/10.1007/s13157-018-1023-8.
[86] Fourth National Climate Assessment, Vol. I, *supra* note 25, at 20.
[87] Id. at 207, 218.
[88] Id. at 257; Fourth National Climate Assessment, Vol. II, *supra* note 6, at 74.
[89] Greg Holland & Cindy .L. Bruyère, Recent intense hurricane response to global climate change, 42 Climate Dynamics 617 (2014); Erik Fraza & James B. Elsner, A climatological study of the effect of sea-surface temperature on North Atlantic hurricane intensification, 36 Physical Geography 395 (2015); Fourth National Climate Assessment, Vol. I, *supra* note 25, at 257; Fourth National Climate Assessment, Vol. II, *supra* note 6, at 74.
[90] Kieran T. Bhatia et al., Recent increases in tropical cyclone intensification rates, 10 Nature Communication 635 (2019).

record. Warming is causing heavier rainfall during hurricanes,[91] and is estimated to have made Hurricane Harvey's record rainfall 3.5 times more likely and significantly more intense.[92] Large storm surge events of Hurricane Katrina magnitude have already doubled in frequency and are projected to increase by twofold to sevenfold for each degree Celsius of temperature rise.[93] As seen during Hurricanes Ida, Laura, and Harvey, many of these storms hit areas with high concentrations of fossil fuel and petrochemical infrastructure, such as Texas and Louisiana on the Gulf Coast, compounding the risks of harm and contamination to communities.[94]

Sea level rise is accelerating in pace,[95] threatening coastal communities, and will be much more extreme without immediate reductions in fossil fuel pollution. According the Fourth National Climate Assessment, global mean sea level is projected to increase up to 2.6 feet by the end of the century under a lower emissions RCP 2.6 scenario, versus up to 6 feet under a high emissions RCP 8.5 scenario, with 8 feet possible.[96] About 4.2 million Americans are at risk of flooding from just three feet of sea level rise, while 13.1 million people would be at risk from six feet of sea level rise, driving mass human migration and extreme societal disruption.[97] As the Fourth National Climate Assessment warned, "Although storms, floods, and erosion have always been hazards, in combination with rising sea levels they now threaten approximately $1 trillion in national wealth held in coastal real estate and the continued viability of coastal communities that depend on coastal water, land, and other resources for economic health and cultural integrity."[98]

vi. Water supply and conservation, water quality

Climate change is threatening U.S. water supplies. Warming and variable precipitation due to climate change are intensifying droughts, reducing snowpack, and decreasing river flows leading to reduced water supplies in many parts of the U.S.[99] In the Southwest, for example, climate change is depleting the Colorado River which is the main source of water for much of the region

[91] Kerry Emanuel, Assessing the present and future probability of Hurricane Harvey's rainfall 2017, 114 PNAS 12681 (2017); David Keellings & José J. Hernández Ayala, Extreme rainfall associated with Hurricane Maria over Puerto Rico and its connections to climate variability and change, 46 Geophysical Research Letters 2964 (2019).
[92] Mark D. Risser & Michael F. Wehner, Attributable human-induced changes in the likelihood and magnitude of the observed extreme precipitation during Hurricane Harvey, 44 Geophysical Research Letters 12,457 (2017).
[93] Aslak Grinsted et al., Homogeneous record of Atlantic hurricane surge threat since 1923, 109 PNAS 19601 (2012); Aslak Grinsted et al., Projected hurricane surge threat from rising temperatures, 110 PNAS 5369 (2013).
[94] Alison Cagle, What Happens When a Hurricane Smashes Into Fossil Fuels?, Earthjustice (2020), https://earthjustice.org/blog/2020-october/what-happens-when-a-hurricane-smashes-into-fossil-fuels.
[95] Fourth National Climate Assessment, Vol. II, *supra* note note 6, at 74, 339.
[96] Fourth National Climate Assessment, Vol. I, *supra* note 25, at 344.
[97] Matthew E. Hauer et al., Millions projected to be at risk from sea-level rise in the continental United States, 6 Nature Climate Change 691 (2016); Mathew E. Hauer, Migration induced by sea-level rise could reshape the US population landscape, 7 Nature Climate Change 321 (2017).
[98] Fourth National Climate Assessment, Vol. II, *supra* note 6, at 324.
[99] *Id.* at 146.

and supports 1 trillion dollars of economic activity per year. Colorado River flow has declined by roughly 20% over the last century, and one-half of that decline is attributed to decreased precipitation and increased warming due to climate change.[100] Studies estimate that every degree Celsius of warming decreases Colorado River flow by 9%.[101] Surface water quality is also declining as water temperatures rise and the higher frequency of heavy downpours mobilizes pollutants.[102]

vii. Wetlands

Climate change has the potential to completely alter the structure and function of the Nation's waters, particularly wetlands and estuaries. Sea level rise threatens to inundate and erode coastal wetlands, with little room for species to move inland because of coastal development.[103] Already sharply reduced in acreage, coastal freshwater wetlands are especially vulnerable to rising sea levels. The loss of wetland areas due to coastal squeeze means loss of their invaluable benefits including essential wildlife habitat, carbon storage, and storm protection.[104] Rising temperatures are projected to greatly disrupt present patterns of plant and animal distributions in freshwater ecosystems and coastal wetlands.[105]

viii. Food and fiber production

Climate change is threatening U.S. food security by decreasing crop yields and nutritional content, increasing stress to livestock, contaminating food supplies, and decreasing access to food.[106] For example, rising temperatures are projected to substantially reduce the yields of the major crops that make up most of human caloric intake and are critical for food security. In the U.S. each degree Celsius of temperature rise is projected to reduce corn yields by 10%, soybeans by 6.8%, and wheat by 5.5%.[107] A separate analysis estimated that each additional ton of CO_2 results in crop losses costing $8.50.[108] Rising temperatures are also increasing unsafe working

[100] Mu Xiao et al., On the causes of declining Colorado River streamflows, 54 Water Resources Research 6739 (2018), https://doi.org/10.1029/2018WR023153; M. Hoerling et al., Causes for the century-long decline in Colorado River flow, 32 Journal of Climate 8181 (2019), https://journals.ametsoc.org/view/journals/clim/32/23/jcli-d-19-0207.1.xml.
[101] P.C.D. Milly & K.A. Dunne, Colorado River flow dwindles as warming-driven loss of reflective snow energizes evaporation, 367 Science 1252 (2020).
[102] Fourth National Climate Assessment, Vol. II, *supra* note 6, at 146.
[103] *Id.* at 331.
[104] *Id.*
[105] Moomaw, *supra* note 85.
[106] Fourth National Climate Assessment, Vol. II, *supra* note 6, at 391–437.
[107] Chuang Zhao et al., Temperature increase reduces global yields of major crops in four independent estimates, 114 PNAS 9326 (2017).
[108] Frances C. Moore et al., New science of climate change impacts on agriculture implies higher social cost of carbon, 8 Nature Communications 1607 (2017), https://www.nature.com/articles/s41467-017-01792-x.

conditions for the more than one million agricultural workers in the U.S., with the number of unsafe days nearly doubling under 2°C of temperature rise and nearly tripling under 4°C.[109]

ix. Energy needs and alternative methods to accomplish them

There is simply no "energy needs" for new fossil fuel infrastructure projects and there are many reasonable "alternative locations and methods" for accomplishing our national energy need objectives. 33 C.F.R. §§ 320.4(a)(1), 320.4(a)(2)(ii). Clean, renewable solar and wind energy, paired with energy storage, efficiency and grid technologies, can be rapidly scaled up to meet U.S. and global energy needs many times over, while providing 100% energy access in a just transition.[110] Solar photovoltaics and wind energy are by far the fastest-growing new energy resources, comprising 90% of the global power sector's growth in 2020.[111] Several solar technologies and wind power are now cheaper than the cheapest fossil fuel generation, while renewables across the board are achieving cost parity.[112] The IPCC has mapped out multiple pathways that achieve the 1.5°C climate limit through immediate, transformative action to end new fossil fuel projects, phase-out existing fossil fuel production and use, and rapidly build up new clean and renewable energy technologies alongside new storage, efficiency, and grid technologies.[113]

Renewable solar and wind energy—particularly distributed renewable energy resources such as rooftop and community solar, storage, and microgrids—are not only a key solution to the climate crisis while fully meeting the nation's energy needs, but also provide numerous co-benefits[114] that serve the public interest and avoid and redress the catastrophic harms to the public interest created by fossil fuel infrastructure. Renewable energy avoids the toxic air and water pollution

[109] Michelle Tigchelaar et al., Work adaptations insufficient to address growing heat risk for U.S. agricultural workers, 15 Environmental Research Letters 094035 (2020), 10.1088/1748-9326/ab86f4
[110] Anthony Lopez et al., U.S. Renewable Energy Technical Potentials: A GIS-Based Analysis. National Renewable Energy Laboratory (2012), https://www.nrel.gov/docs/fy12osti/51946.pdf; Sven Teske & Sarah Niklas, Fossil Fuel Exit Strategy: An orderly wind down of coal, oil and gas to meet the Paris Agreement (2021), https://fossilfueltreaty.org/exit-strategy; Carbon Tracker Initiative, The Sky's The Limit: Solar and wind energy potential is 100 times as much as global energy demand (2021), https://carbontracker.org/reports/the-skys-the-limit-solar-wind/
[111] Press Release, International Energy Agency, Renewables are stronger than ever as they power through the pandemic (May 11, 2021), https://www.iea.org/news/renewables-are-stronger-than-ever-as-they-power-through-the-pandemic.
[112] Lazard, Insights: Levelized Cost Of Energy, Levelized Cost Of Storage, and Levelized Cost Of Hydrogen (2020), https://www.lazard.com/perspective/levelized-cost-of-energy-levelized-cost-of-storage-and-levelized-cost-of-hydrogen/; Simon Evans, Carbon Brief, Solar is now 'cheapest electricity in history', confirms IEA (Oct. 13, 2020, 8:37 PM), https://www.carbonbrief.org/solar-is-now-cheapest-electricity-in-history-confirms-iea.
[113] IPCC, Global Warming of 1.5°C, *supra* note 2, at Summary for Policymakers.
[114] Rebecca R. Hernandez et al., Techno-Ecological Synergies of Solar Energy for Global Sustainability, 2 Nature Sustainability 560 (2019), https://www.nature.com/articles/s41893-019-0309-z?proof=t%2525C2%2525A0

created by the current fossil fuel-dominated energy system that disproportionately harms Black, Brown, Indigenous, and low-income communities[115] as well as injuring wildlife and ecosystems.[116] Rooftop solar and community-owned solar and storage offer critical climate resilience benefits during emergencies, such as hurricanes and wildfires worsened by the climate crisis, and can empower local communities through local energy choice, job creation, and other regenerative economic benefits that remain local. [117]

x. Economics, jobs, and just transition

Economic considerations also militate against the approval of new fossil fuel infrastructure projects. The costs of continued warming will be astronomical. The climate crisis has exacted a heavy economic toll, already costing U.S. economy more than $1 trillion dollars in damages, with economic losses worsening with additional carbon pollution.[118] Each 1°C temperature rise is estimated to decrease U.S. gross domestic product (GDP) by 1.2%, with the poorest regions of the U.S. suffering most.[119] At the global scale, warming of 2°C versus 1.5°C is projected to decrease global GDP by an additional 1.5 to 2% and cost $7.7 to 11.1 trillion in damages by mid-century.[120]

Critically, fossil fuel infrastructure approvals also lead to carbon lock-in, "whereby prior decisions relating to GHG-emitting technologies, infrastructure, practices, and their supporting

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[115] Donaghy & Jiang, *supra* note 4.

[116] Nathalie Butt et al., Biodiversity risks from fossil fuel extraction, 342 Science 425 (2013); Margaret C. Brittingham et al., Ecological risks of shale oil and gas development to wildlife, aquatic resources and their habitats, 48 Environmental Science and Technology 11034 (2014); Paul D. Pickell et al., Monitoring forest change in landscapes under-going rapid energy development: challenges and new perspectives, 3 Land 617 (2014); Sara Souther et al., Biotic impacts of energy development from shale: research priorities and knowledge gaps, 12 Frontiers in Ecology and the Environment 330 (2014); Brady W. Allred et al., Ecosystem services lost to oil and gas in North America, 348 Science 401 (2015); Michael B. Harfoot et al., Present and future biodiversity risks from fossil fuel exploitation, 11 Conservation Letters e12448 (2018).

[117] Energy Democracy: Advancing Equity in Clean Energy Solutions, (Denise Fairchild & Al Weinrub eds., 2018), https://islandpress.org/sites/default/files/9781610918510_excerpt.pdf; Sherry Stout et al., National Renewable Energy Laboratory, Distributed Energy Planning for Climate Resilience (2018), https://www.nrel.gov/docs/fy18osti/71310.pdf; John Farrell, The New Rules Project, Community Solar Power: Obstacles and Opportunities (2010), https://ilsr.org/wp-content/uploads/files/communitysolarpower2.pdf.

[118] Solomon Hsiang et al., Estimating economic damage from climate change in the United States, 356 Science 1362 (2017), https://science.sciencemag.org/content/356/6345/1362; *Examining the Macroeconomic Impacts of a Changing Climate: Hearing Before the Subcomm. on National Security, International Development, and Monetary Policy of the H. Comm. on Financial Services*, 116th Cong. (2019) (written testimony of Marshall Burke, Assistant Professor of Earth System Science, Stanford University), https://www.congress.gov/116/meeting/house/109911/witnesses/HHRG-116-BA10-Wstate-BurkeM-20190911.pdf.

[119] Hsiang et al, *supra* note 118.

[120] Marshall Burke et al., Large potential reduction in economic damages under UN mitigation targets, 557 Nature 549 (2018), https://www.nature.com/articles/s41586-018-0071-9.

networks constrain future paths, making it more challenging, even impossible, to subsequently pursue more optimal paths toward low-carbon objectives."[121] Once approved and constructed, a variety of incentives exist to continue to operate a fossil fuel infrastructure project—and thus to continue to extract and burn fossil fuels—even when it is not beneficial from an overall investment or policy perspective to do so.[122]

Because of the urgency of climate mitigation, significant harm can come even from small lock-in risks.[123] At the very least, these projects increase the cost of achieving climate goals.[124] One study found a 10-year delay in mitigating emissions to keep warming to 1.5°C is estimated to cost an additional 3.7 trillion dollars per year.[125] The more fundamental harm of carbon lock-in is that if fossil fuel projects are not retired early, avoiding cataclysmic climate damage becomes impossible. [126] Yet the Corps routinely approves permits for major fossil fuel infrastructure projects that will contribute substantially to carbon lock-in.

In addition to the threat that continued warming from fossil fuel project approvals poses to our economy, these approvals also pose substantial risks to investors. The term "stranded assets," is applied to a project that becomes economically unusable before it reaches the end of its expected investment horizon, or otherwise produces a poor return for the investor.[127] Thus, approval of fossil fuel infrastructure projects creates a no-win situation: either the projects will remain operational, contributing to the destruction of the world as we know it, or they are a drag on the economy, increasing the cost of mitigation, wasting investment capital and providing poor or no returns when they become unusable before the end of their expected lifetimes. Either way, if we are to meet our climate goals, there is no economic benefit to such approvals.

The Corps often points to the project proponent's job creation claims to support its fossil fuel infrastructure approvals, while omitting any consideration of the project's contribution to the climate crisis and resulting harm to jobs and the economy.[128] Yet each fossil fuel infrastructure

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[121] Peter Erickson et al., Assessing carbon lock-in, 10 Environmental Research Letters 084023 (2015).
[122] Karen Seto et al., Carbon Lock-In: Types, Causes, and Policy Implications, 41 Annual Review of Environment and Resources 425 (2016), https://www.semanticscholar.org/paper/Carbon-Lock-In%3A-Types%2C-Causes%2C-and-Policy-Seto-Davis/4ff57e5d97b44f8ef06e71fc34cd945cb2f0629a; Erickson et al., *supra* note 121; Intergovernmental Panel on Climate Change, Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report (Ottmar Edenhofer et al. eds., 2014) at 18.
[123] Seto et al., *supra* note 122.
[124] *Id.*
[125] Marshall Burke et al., Global Non-linear Effect of Temperature on Economic Production, 527 *Nature* 235 (2015) at 5.
[126] Tong et al. 2019, *supra* note 13; *See also* Executive Office of the President of the United States, The Cost of Delaying Action to Stem Climate Change (2014) at 9, *available at* https://scholar.harvard.edu/files/stock/files/cost_of_delaying_action.pdf at 5.
[127]Luca De Lorenzo & Per-Anders Enkvist, Stockholm Environmental Institute & Materials Economics, Framing stranded assets in an age of disruption (2018).
[128] For example, in its public interest "review" of the Formosa Plastics facility discussed in more detail below, the Corps marked the project as "Beneficial" on the factor of "Economics" both locally and

approval not only deepens the climate crisis, but also represents a foregone opportunity to create economic benefits from investing in a clean alternative approach.

Study after study has shown that investment in clean energy creates many more jobs than investment in fossil fuels.[129] Globally, undertaking ambitious climate action could result in an additional 65 million jobs by 2030 as compared to a business as usual scenario.[130] A global survey of more than 200 of the world's most senior economists at the onset of the COVID-19 downturn reinforced these findings, concluding that clean energy infrastructure is among the top investments we can make, both in terms of climate benefits and having the highest stimulus effect.[131] Clean energy infrastructure is also particularly well suited as an economic recovery measure because it is very labor intensive in the early stages. Investment in a full suite of just transition policies will bring family sustaining jobs, many economic benefits, and a brighter future for all.[132]

While the Corps obviously does not have the ability to implement a comprehensive just transition plan for the country, the Corps must recognize that each of its fossil fuel infrastructure approvals crowds out renewable energy and represents a foregone opportunity to create economic benefits from investing in a truly clean alternative. President Biden has indicated his

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globally by adopting the proponent's positions and making no reference to any negative economic impacts from the project. In full, the Corps stated: "This project will be beneficial to economics in the form of bringing revenue to the state and local area through the sale of the products made at the facility and the purchase of products and electricity used to make the end product. Additionally, many jobs will be created temporarily and permanently. The state and local governments will also see revenue from the plant both in property taxes and sales taxes. Lastly, construction products will be purchased and other ancillary things during construction such as gas, housing, and food. The economic benefit from this project spans from local [sic] global scale." Memorandum for Record, Department of the Army Environmental Assessment and Statement of Findings for the Above-Referenced Standard Individual Permit Application (MVN-2018-00159-CM) (2019), at 50.

[129] Brian O'Callaghan & Cameron Hepburn, Carbon Brief, Leading economists: Green coronavirus recovery also better for economy (May 5, 2020, 6:54 AM), https://www.carbonbrief.org/leading-economists-green-coronavirus-recovery-also-better-for-economy; Heidi Garett-Peltier, Green versus brown: Comparing the employment impacts of energy efficiency, renewable energy, and fossil fuels using an input-output model, 61 Economic Modelling 439 (2017); Robert Pollin et al., Center for American Progress & Political Economy Research Institute, Green Growth: A U.S. Program for Controlling Climate Change and Expanding Job Opportunities (2014).

[130] Global Commission on the Economy and the Climate, Unlocking the Inclusive Growth Story of the 21st Century: Accelerating Climate Action in Urgent Times 39 (2018), http://newclimateeconomy.report/2018/wp-content/uploads/sites/6/2019/04/NCE_2018Report_Full_FINAL.pdf

[131] O'Callaghan & Hepburn, *supra* note 129.

[132] Pollin et al., *supra* note 129; *See also* Political Economy Research Institute, Green Economy Transition Programs for U.S. States (Feb. 25, 2021), https://www.peri.umass.edu/publication/item/1032-green-new-deal-for-u-s-states; J. Mijin Cha et al., Labor Network for Sustainability, Workers and Communities in Transition: Report of the Just Transition Listening Project (2021), https://www.labor4sustainability.org/JTLP-2021/.

support for a full just transition to clean energy, yet with each new fossil fuel approval the Corps undercuts this vision.

xi. Public and private need

The Corps is required to objectively assess the public and private need for projects. 33 C.F.R. § 320.4(a)(2)(i). This necessarily requires distinguishing between, and fairly considering, the public versus the private need for a fossil fuel project. The Corps must thus grapple with a fundamental problem presented by carbon lock-in: what may benefit a few individuals, landowners, or companies is extraordinarily destructive to society as a whole.[133] Private developers and investors continue to have a short-term financial incentive to proceed with fossil fuel infrastructure projects, even as catastrophic climate damages mount throughout the country and the world. The Corps has traditionally relied uncritically upon whatever justification a project proponent presents for its project. *See, e.g. infra* at 35. The Corps must cease this unlawful practice and instead clearly articulate and distinguish between the public and any purported private need (or lack thereof) at issue in each permit application. Even if the Corps were to consider every last cent that the project developer might squeeze out of a new fossil fuel project, that simply will not outweigh the public need to rapidly reduce fossil fuel infrastructure and use, transition to clean energy, and avoid the most catastrophic harms from the climate crisis.

xii. Extent and Permanence of Detrimental Effects of Fossil Fuel Infrastructure

The public interest review regulations require the Corps to consider the "extent and permanence of the beneficial and/or detrimental effects which the proposed structure or work is likely to have on the public and private uses to which the area is suited." 33 C.F.R. § 320.4(a)(2)(iii). Overwhelming scientific evidence makes clear that the "extent" of the "detrimental effects" from new fossil fuel infrastructure is widespread, catastrophic climate change harms, reaching every corner of the U.S. and the globe, and that many of these harms—including sea level rise, extinction, and the crossing of tipping points—are permanent on human timescales.

Because CO_2 in the atmosphere is so long lived, fossil fuel CO_2 pollution commits the planet to long-lasting climate change harms that are irreversible on a multi-century to millennial time scales.[134] In particular, climate change harms that are caused by CO_2 emissions—such as surface warming, ocean warming, sea level rise, and ocean acidification—are irreversible on human timescales.[135] The catastrophic species extinctions projected to occur with continued fossil fuel

[133] Seto et al., *supra* note 122.
[134] Intergovernmental Panel on Climate Change, *Summary for Policymakers*, *in* Climate Change 2013: The Physical Science Basis, Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change 26 (T.F. Stocker et al. eds., 2013); Peter U. Clark et al., Consequences of twenty-first century policy for multi-millennial climate and sea-level change, 6 Nature Climate Change 360 (2016).
[135] David Archer & Victor Brovkin, The millennial atmospheric lifetime of anthropogenic CO_2, 90 Climatic Change 283 (2008); Susan Solomon et al., Irreversible climate change due to carbon dioxide emissions, 106 PNAS 1704 (2009).

emissions are likewise permanent and devastating to the web of life.[136] U.S. fossil fuel infrastructure is also a large source of methane[137]—a super-pollutant 87 times more powerful than CO_2 at warming the atmosphere over a 20-year period.[138] Immediate, deep cuts in methane emissions are critical for limiting warming to 1.5°C and avoiding the crossing of irreversible planetary tipping points.[139]As the National Research Council warned, "emission reduction choices made today matter in determining impacts that will be experienced not just over the next few decades, but also into the coming centuries and millennia."[140]

Critically, the more fossil fuel pollution that is added to the atmosphere, the higher the risk of crossing planetary tipping points—abrupt and irreversible changes in Earth systems to states wholly outside human experience, resulting in severe physical, ecological and socioeconomic harms.[141] Coral reefs and Arctic ecosystems are already suffering devastating regime shifts, and the climate system is nearing tipping points including the collapse of the West Antarctic ice sheet,[142] enormous CO_2 and methane release from thawing Arctic permafrost,[143] and slowing of the Atlantic meridional overturning circulation which would worsen sea level rise along the U.S. east coast and cause global weather and climate disruptions.[144] A 2019 expert scientific review

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[136] Mark C. Urban, Accelerating extinction risk from climate change, 348 Science 571 (2015); Román-Palacios & Wiens, *supra* note 78.

[137] Ramón A. Alvarez et al., Assessment of methane emissions from the U.S. oil and gas supply chain, 361 Science 186 (2018); Z. R. Barkley et al., Analysis of oil and gas ethane and methane emissions in the southcentral and eastern United States using four seasons of continuous aircraft ethane measurements, 126 Journal of Geophysical Research: Atmospheres *(*2021).

[138] Gunnar Myhre et al., Intergovernmental Panel on Climate Change, Chapter 8: Anthropogenic and Natural Radiative Forcing. In: Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (2013), at Table 8.7.

[139] United Nations Environment Programme and Climate and Clean Air Coalition, Global Methane Assessment: Benefits and Costs of Mitigating Methane Emissions, Nairobi: United Nations Environment Programme (2021), https://www.unep.org/resources/report/global-methane-assessment-benefits-and-costs-mitigating-methane-emissions.

[140] National Research Council, Warming World: Impacts by Degree 3 (2011).

[141] IPCC, Climate Change 2021, *supra* note 25, at 4-76; Fourth National Climate Assessment, Vol. I, *supra* note 25, at 32, 411-423; Timothy M. Lenton et al, Tipping elements in the Earth's climate system, 105 PNAS 1786 (2008).

[142] James Hansen et al., Ice melt, sea level rise and superstorms: evidence from paleoclimate data, climate modeling, and modern observation that 2°C global warming could be dangerous, 16 Atmospheric Chemistry and Physics 3761 (2016); Fourth National Climate Assessment, Vol. I, *supra* note 25, at 420; Frank Pattyn et al., The Greenland and Antarctic ice sheets under 1.5°C of global warming, 8 Nature Climate Change 1053 (2018); Julius Garbe et al., The hysteresis of the Antarctic ice sheet, 585 Nature 538 (2020).

[143] Fourth National Climate Assessment, Vol. I, *supra* note 25, at 303, 314-315, 419; Charles D. Koven et al., Permafrost carbon-climate feedbacks accelerate global warming, 108 PNAS 14769 (2011); Róisín Commane et al., Carbon dioxide sources from Alaska driven by increasing early winter respiration from Arctic tundra, 114 PNAS 5361 (2017).

[144] Fourth National Climate Assessment, Vol. I, *supra* note 25, at 418; Niklas Boers, Observation-based early-warning signals of the collapse of the Atlantic Meridional Overturning Circulation, 11 Nature Climate Change 680 (2021).

concluded in stark terms that "the evidence from tipping points alone suggests that we are in a state of planetary emergency: both the risk and urgency of the situation are acute."[145]

V. The Corps Must Revoke Nationwide Permit 12 As Contrary to the Public Interest and Cannot Lawfully Approve any Fossil Fuel Infrastructure through a Nationwide Permit

Despite the irrefutable evidence that fossil fuel infrastructure approvals are contrary to the public interest, the Corps continues to indefensibly permit a new generation of fossil fuel expansion through the use of nationwide permitting. The Corps reauthorized nationwide permit (NWP) 12 on January 13, 2021, in the final days of the Trump administration. The purpose of NWP 12 is to fast-track authorization of fossil fuel pipelines, allowing for an unlimited number of water crossings for oil and gas pipelines and associated facilities throughout the country. As detailed below, the Corps must revoke NWP 12 because it is contrary to the public interest.[146] Furthermore, the Corps must not authorize further fossil fuel infrastructure projects through nationwide permitting.

NWP 12 authorizes "activities required" for the construction of oil and gas pipelines and associated facilities in waters of the U.S. under the Clean Water Act and the RHA, so long as the activity does not result in loss of more than ½ acre of waters of the U.S. at each point that the project crosses jurisdictional waters.[147] It covers the construction of water crossings for oil and gas pipelines, the construction and expansion of pipeline substation facilities, and the construction of access roads for the construction and maintenance of pipelines.[148] The Corps estimates that NWP 12 will be used 9,560 times per year (including 8,110 reported uses and 1,450 unreported uses), or an estimated 47,800 times over its expected five-year duration (2021-2026).[149]

Although the use of NWP 12 is limited to pipelines with up to a ½ acre of loss of U.S. waters for each "single and complete project," the Corps defines that term as "that portion of the total linear project . . . that includes *all crossings of a single water of the United States (i.e., a single waterbody) at a specific location*." Reissuance and Modification of Nationwide Permits, 86 Fed. Reg. 2,744, 2,877 (Jan. 13, 2021) (emphasis added). In other words, NWP 12 allows pipeline projects to use NWP 12 separately at each location where the project crosses a river, stream, or wetland. By contrast, non-linear projects can invoke NWP 12 only once for the overall project,

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[145] Timothy M. Lenton et al., Climate tipping points—too risky to bet against, 575 Nature 592 (2019).
[146] There are many additional reasons to revoke NWP 12, as outlined in the ongoing lawsuit against it, which we hereby incorporate by reference. *Center for Biological Diversity v. Scott*, 4:21-cv-00047 (D. Mont., May 3, 2021).
[147] U.S. Army Corps of Engineers, Nationwide Permit 12 Final Decision Document (Jan. 4, 2021), *available at* https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll7/id/16834. [hereinafter *NWP 12 Decision*] at 1.
[148] *Id.* at 2.
[149] *Id.* at 108. The Corps' Decision Document for NWP 12 provides the public interest review required by Corps regulations at 33 CFR 320.4(a), as well as the Corps' environmental assessment of NWP 12 pursuant to the National Environmental Policy Act.

unless the separate components of the project would have "independent utility" (i.e., if the components could function as stand-alone projects). *Id.* at 2876.

NWP 12 thus allows the Corps to treat each water crossing along the route of a proposed pipeline project—crossings that often number in the hundreds or thousands—as a "single and complete project" that each qualifies separately under NWP 12. There is no limit to the number of times that a single pipeline project can invoke NWP 12, nor is there a maximum number of acres of water that a pipeline project can impact while still being authorized in a piecemeal fashion under NWP 12.

The Corps' Public Interest Determination for NWP 12 makes a mockery of Congress' intent to ensure broad consideration of public interest factors in all permitting decisions and to deny permits that are contrary to the public interest. The cursory analysis provided by the Corps—which cannot fairly be described as the "review," "evaluation," "careful weighing" or "balancing" required by the regulations,33 C.F.R. § 320.4(a)(1)—is a textbook example of an agency punting its legal requirements and reaching a pre-determined outcome with as little effort as possible.

The Corps admitted that "oil or natural gas pipeline activities authorized by this NWP may induce higher rates of energy consumption in the area by making natural gas and petroleum products more readily available to consumers,"[150] and that "general environmental concerns may include the burning of the fossil fuels that occurs after the oil or natural gas reaches its destination, which produce carbon dioxide that contribute to greenhouse gas emissions."[151] Yet the Corps unlawfully declined to conduct any actual analysis of this greenhouse pollution, asserting that it "does not have the authority to control the burning of fossil fuels or the adverse environmental effects that are caused by burning those fossil fuels to produce energy."[152] It took the same approach when considering the effect permitting pipelines has on other fossil fuel infrastructure. While acknowledging that pipelines may induce additional fossil fuel infrastructure projects, the Corps disclaimed responsibility for consideration of this important issue as well: "[a]dditional power plants or oil refineries may be needed to meet increases in energy demand, but these issues are beyond the Corps' control and responsibility."[153]

In other portions of the public interest review, however, the Corps invoked effects over which it could similarly contend it has no jurisdiction or control as benefits that purportedly justify the project. For example, under "food and fiber production," the Corps speculated that "[f]ood production may be increased by activities authorized by this NWP. For example, this NWP can authorize the construction or expansion of natural gas lines that provide energy to commercial food production facilities, such as bakeries, canneries, and meat processing plants."[154]

[150] *Id.* at 97.
[151] *Id.* at 91.
[152] *Id.* at 91.
[153] *Id.* at 97.
[154] *Id.* at 98.

The National Climate Assessment, which as noted above is prepared pursuant to Congressional mandate specifically for federal agencies to use in their decisionmaking, includes an entire chapter on food production. The National Climate Assessment explains the many ways the climate crisis is threatening U.S. food security by decreasing crop yields and nutritional content, increasing stress to livestock, contaminating food supplies, and decreasing access to food.[155] Relying on the supposed benefits of NWP 12 to food production because oil and gas pipelines may serve bakeries and canneries, while simultaneously ignoring the entire body of science on the climate harms to that same economic sector from fossil fuels is arbitrary, capricious, and unlawful. *Columbia Riverkeeper v. United States Army Corps of Eng'rs*, No. 19-6071 RJB, 2020 U.S. Dist. LEXIS 219535, at *22-23 (W.D. Wash. Nov. 23, 2020).

The Corps' excuse that it "does not have the authority to control the burning of fossil fuels or the adverse environmental effects that are caused by burning those fossil fuels to produce energy" is unavailing.[156] This contradicts the plain text of the Corps' regulations, which require it to consider the "probable impacts, including cumulative impacts, of the proposed activity *and its intended use* on the public interest." It is inconsistent with the purpose for which the public interest test was introduced: to "take into account a *full range* of economic, social, and environmental factors" in deciding whether to issue permits under the Clean Water Act. *United States v. Alaska*, 503 U.S. 569, 582 (1992) (emphasis added).

While there are many additional reasons to do so, the Corps can and must revoke NWP 12 because the approval of oil and gas pipelines is contrary to the public interest for the reasons described above and because the Corps' public interest determination for NWP 12 is fundamentally flawed.[157] The Corps must not authorize additional fossil fuel pipeline or other fossil fuel infrastructure projects through its nationwide permitting program.

VI. The Corps Must Revoke Unlawfully Issued Individual Clean Water Act Section 404 and RHA Section 10 Permits for Fossil Fuel Infrastructure Projects and Deny New Applications for the Same

The Corps must also revoke unlawfully issued individual Section 404 dredge and fill permits for fossil fuel infrastructure projects and stop authorizing new permits for these projects, as, for the reasons detailed above, they are individually and cumulatively contrary to the public interest. A "careful weighing" of the "benefits which reasonably may be expected to accrue" against these projects' "reasonably foreseeable detriments," 33 C.F.R. § 320.4(a)(1), can only lead to one

[155] Fourth National Climate Assessment, Vol. II, *supra* note 6, at 391–437.
[156] NWP 12 Decision, *supra* note 147, at 91.
[157] For example, in addition to the prohibition on issuing NWPs that are contrary to the public interest, the Corps may only issue NWPs where the activities permitted "will cause only minimal adverse environmental effects when performed separately, and will have only minimal cumulative adverse effect on the environment." 33 U.S.C. § 1344(e)(1). NWP 12 allows for the construction of massive oil and gas pipelines that have a more than minimal, and indeed *significant*, environmental impacts, climate-related and otherwise, in direct violation of this plain language of the Clean Water Act. *See Ctr. for Biological Diversity v. Scott*, 4:21-cv-00047 (D. Mont. May 3, 2021).

conclusion: the catastrophic impacts of these projects on our environmental, cultural, social, and economic systems overwhelmingly outweigh any purported benefits they might confer. The following case studies are illustrative, though by no means exhaustive, examples of the kinds of fossil fuel projects for which permits should be denied or revoked.

Case Study: Formosa Plastics

One of the many projects issued a permit pursuant to Clean Water Act Section 404 and RHA Section 10 permit by the Corps that powerfully illustrates the debilitating individual and cumulative impacts of continued fossil fuel infrastructure buildout is the Formosa Plastics petrochemical complex proposed for St. James parish, Louisiana (the "Plastics Complex"). This massive Plastics Complex would turn fracked gas into the building blocks for plastic products. The Corps described the project's "purpose and need" as industrial development to meet "the growing demand for polypropylene and polyethylene," [158] a fundamentally flawed presumption that has since been undermined by a 2021 Institute for Energy Economics and Financial Analysis (IEEFA) report detailing the financial and other risks this project faces, including oversupply concerns.[159]

The Plastics Complex will include ten chemical plants and numerous support facilities, a heavy haul road across a major levee for the Mississippi River, three barge and ship docks, a rail complex, power generation facilities, and pipelines. It intends to build this complex in a 95 percent Black, low-income area that has a long history of environmental racism.[160] The corridor along the Mississippi River between New Orleans and Baton Rouge is known as "Cancer Alley" due to the many polluting petrochemical plants and refineries already located there. The Plastics Complex will disproportionately burden this community with more pollution and other environmental harms, destroy wetlands, and threaten at least two known historic plantation cemeteries on site containing the graves of enslaved people.[161] In March 2021, the United Nations Human Rights Office of the High Commissioner called the project "environmental racism" and urged U.S. officials to reject the project.[162]

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[158] U.S. Army Corps of Engineers, Memorandum for Record, Department of the Army Environmental Assessment and Statement of Findings for the Above-Referenced Standard Individual Permit Application (MVN-2018-00159-CM) (2019), https://drive.google.com/file/d/1UM11TEK62w1vr132vttEjBb5Z85bAScr/view?usp=sharing [hereinafter *Memorandum for* Record] at 8.

[159] Tom Sanzillo & Suzanne Mattei, Formosa's Louisiana Project: Wrong Products, Wrong Time, Wrong Place, Wrong Finances (2021), http://ieefa.org/wp-content/uploads/2021/03/Formosa-Louisiana-Wrong-Products-Wrong-Time-Wrong-Place-Wrong-Finances_March-2021.pdf; *see also* Lila Holzman & Joshua Romo, As You Sow, Plastics: The Last Straw for Big Oil? An Investor Brief on the Risks of Overinvestment in Petrochemicals (2021).

[160] *See, e.g.*, Oliver A. Houck, Shintech: Environmental Justice at Ground Zero, 31 Georgetown Envtl. L. Rev. 455, 459–61, 472–75 (2019).

[161] See, e.g. Christina Carrega, *$9.4 billion plastics facility to be built on slave burial grounds, report says,* ABC News, May 15, 2020, https://abcnews.go.com/US/94-billion-plastics-facility-built-slave-burial-grounds/story?id=69555811.

[162] Press Release, United Nations Human Rights Office of the High Commissioner, USA: Environmental racism in "Cancer Alley" must end – experts (Mar. 2, 2020), https://www.ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx?NewsID=26824&LangID=E.

In permitting this project in 2019, the Corps' New Orleans District failed to comply with the Clean Water Act and RHA public interest requirements. As noted above, the Clean Water Act regulations are clear that the Corps must evaluate all relevant factors when engaging in its public interest evaluation and it must deny projects that are contrary to the public interest. A project that exacerbates climate change to the degree that the Formosa Plastics Complex does implicates almost every enumerated factor the Corps must consider in its evaluation of Section 404 permit applications and whether they are in the public interest and must be rejected.

Again, among the non-exhaustive list of factors the Corps is required to consider are conservation, wetlands, aesthetics, general environmental concerns, fish and wildlife, flood hazards, water supply and quality, safety, property ownership and land use, historic properties, shore erosion and accretion, land use, recreation, and the needs and welfare of people.[163] The cumulative impacts of proposed permit activities on these factors must also be weighed.[164] Even individually "minor" alterations can have cumulatively significant impacts and "can result in major impairment of . . . resources."[165] This logic is particularly apt in the fossil fuel infrastructure project context, where each project's greenhouse gas pollution, while perhaps considered insignificant by each individual project proponent, nonetheless further commits the planet and humanity to a catastrophic climate scenario.

Formosa Plastics' climate pollution cannot be considered individually or cumulatively insignificant or in the public interest, despite the Corps' conclusion otherwise in 2019. The Formosa Plastics Complex would be the largest greenhouse gas emitter in the State of Louisiana and *directly* emit more than 13.6 million tons[166] of carbon pollution every year— the equivalent to 3.5 coal-fired power plants—not including any upstream or downstream climate impacts, and would be one of the largest sources of greenhouse gases in the U.S.[167]

Despite these climate harms alone (alongside a multitude of other significant impacts to air quality, water quality, environmental justice, wetlands, historic and cultural properties, and other environmental resources), the Corps failed to carefully evaluate all the relevant public interest factors. Instead, it adopted Formosa Plastics' findings and conclusions as its own and issued an

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[163] 33 C.F.R. § 320.4(a)(1); *see Water Works & Sewer Bd. v. United States Dep't of Army*, 983 F. Supp. 1052, 1075 n17 (N.D. Ala. 1997) ("This is not an exhaustive list, but solely an indicator of the factors that the Corps may find relevant to consider."); *Hough v. Marsh*, 557 F. Supp. 74, 86 (D. Mass. 1982) ("This [public interest] provision recites a non-exhaustive list of some sixteen factors . . . ."); *see also United States v. Philip Morris USA, Inc.*, 386 U.S. App. D.C. 49, 68, 566 F.3d 1095, 1114 (2009) (explaining statutory interpretation principle that words such as "includes" indicates a non-exhaustive list); Georgetown Law Center, "A Guide to Reading, Interpreting and Applying Statutes" (2017), https://www.law.georgetown.edu/wp-content/uploads/2018/12/A-Guide-to-Reading-Interpreting-and-Applying-Statutes-1.pdf, at 5, citing Antonin Scalia & Bryan A. Garner, READING LAW (2012).

[164] 33 C.F.R. § 320.4(a)(1).

[165] 33 C.F.R. § 320.4(b)(3).

[166] Memorandum for Record, *supra* note 158, at 23.

[167] Of all fossil fuel infrastructure projects tracked by the Environmental Integrity Project since 2012, this Formosa Plastics facility represents the largest source of greenhouse gas emissions proposed for the U.S. *See* Environmental Integrity Project, EIP Emissions Increase Database (last updated 05/03/2021), *available at* https://environmentalintegrity.org/download/eip-emissions-increase-database/.

Environmental Assessment and decision document that concluded the Plastics Complex would have no significant impacts to climate, or any other environmental factors, and was in the public interest.

To reach this conclusion, the Corps made many one-sided, unsupported conclusions, including that the project would have an overall beneficial economic impact (looking only at the project's purported benefits, not its detriments), that the 14-plant petrochemical complex would have a "negligible" impact on aesthetics, energy needs, and mineral needs (including hydrocarbon resources), and that the project would have a "Neutral (mitigated)" impact on conservation, wetlands, historic properties, fish and wildlife values, flood hazards, and general environmental concerns including plastic pollution.[168] On the issue of climate change specifically, the Corps refused to assess the impacts of the petrochemical complex on climate, concluding instead that "[t]he Corps has no authority to regulate emissions that result from the combustion of fossil fuels. These are subject to federal regulations under the Clean Air Act and/or the Corporate Average Fuel Economy (CAFE) Program."[169]

After the filing of a lawsuit challenging the Corps' 2019 permit decision, *Center for Biological Diversity, et al. v. U.S. Army Corps of Engineers*, Case 1:20-cv-00103-RDM (D.D.C.), the Corps suspended the permits issued to Formosa Plastics, and Corps leadership recently ordered that a full Environmental Impact Statement be prepared if the project intends to proceed.[170] A full evaluation of the project's significant climate impacts (and vulnerabilities) and environmental justice concerns must ultimately result in denial of this project's Clean Water Act Section 404 and RHA Section 10 permit application as contrary to the public interest. This should be particularly evident in the aftermath of Hurricane Ida, which ripped through St. James Parish on August 29, 2021, devastating homes and leaving oil and chemical spills in its wake.[171]

Case Study: Enbridge Line 3 Pipeline

The Corps likewise issued a Clean Water Act Section 404 permit and alteration of an RHA Section 10 permit for the Line 3 oil pipeline replacement project in November 2020 without proper consideration of the harms to the climate, environmental justice, and Tribal treaty rights

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[168] Memorandum for Record, *supra* note 158, at 50-55. It goes so far as to contend, for example, that while "the applicant has identified a demand for plastic as it is in most things used by the general public," any plastic pollution from the complex or use of its products is neutralized as "[r]ecycling programs in many areas help to mitigate the disposable plastic issues identified across the world." *Id*. at 51.

[169] *Id.* at 55.

[170] Memorandum from Jaime E. Pinkham, Acting Assistant Secretary of the Army (Civil Works), Memorandum for Commanding General, U.S. Army Corps of Engineers, Formosa Group Chemical Plant Environmental Impact Statement (EIS) and Referral for Decision (Aug. 18, 2021).

[171] *See, e.g.*, Antonia Juhasz, Hurricane Ida Pounded Louisiana's 'Cancer Alley.' Its Residents Need Help, and Demand Change, Rolling Stone, Sept. 7, 2021, https://www.rollingstone.com/politics/politics-news/hurricane-ida-louisiana-cancer-alley-1221409/; *See, e.g.* Tristan Baurick & Jeff Adelson, *Almost 600 Louisiana sites with toxic chemicals lie in Hurricane Ida's path*, The New Orleans Advocate, Aug. 28, 2021; Hiroko Tabuchi, *Ida Hit One of the Country's Biggest Oil and Chemical Hubs*, New York Times, Aug. 30, 2021.

caused by approval of a project the sole purpose of which is to facilitate the production and use of dirty tar sands oil produced in Canada.[172] The Line 3 pipeline will travel across hundreds of miles in Minnesota, transporting 760,000 barrels per day of oil.

The Corps' permits authorize hundreds of water crossings in pristine Minnesota lake country, much of which is subject to treaties with local tribes. For instance, the pipeline will result in the destruction of wetlands sacred to the Red Lake Band of Chippewa Indians, run within 10 miles of the reservation, and cross lands the Red Lake Band uses to gather, hunt, trap, fish, harvest wild rice and for other cultural and ceremonial purposes.[173] It will run within three miles of the White Earth Reservation's boundaries, and affect lands that the White Earth Band of Chippewa Indians uses for hunting, gathering, fishing, harvesting wild rice and for other cultural purposes.[174] The Corps permits allow dredging of water bodies that the Ojibwe nations rely on for sustenance.[175] These permits were issued in violation of numerous statutory and regulatory requirements, in violation of treaty rights, and without the free, prior, and informed consent of the affected Tribes.

In permitting Line 3, the Corps refused to analyze any climate change impacts other than the potential emissions from wetland conversion. In a single paragraph, without quantifying any emissions associated with the project, the Corps dismissed Line 3's contributions to climate change as "negligible."[176] In reality, the lifecycle greenhouse gas emissions from Line 3 are estimated to be 193 million tons per year.[177] That value is higher than the yearly emissions of many modest-sized countries and is entirely at odds with any and all policies to limit greenhouse gas emissions to avoid catastrophic warming. As with the permits issued for the Formosa Plastics Complex, the Corps wrongly concluded that, because it does not have the authority to regulate climate change, it is not required to consider Line 3's full set of greenhouse gas emissions.[178] Given it failed to analyze the full climate impacts of Line 3, the Corps' weighing of climate change impacts in its public interest determination consisted of a single sentence dismissal: "[g]reenhouse gas emissions from the Corps' action have been weighed against national goals of

[172] U.S. Army Corps of Engineers, Enbridge Line 3 Project Summary, https://www.mvp.usace.army.mil/Enbridge_Line3/.
[173] Exhibit K: Declaration of Samuel Strong in Support of Plaintiffs' Motion for Preliminary Injunction, *Red Lake Band of Chippewa Indians v. United States Army Corps of Engineers*, 20-cv-3817 (D.D.C. Dec. 24, 2020), ECF No. 2-13.
[174] Exhibit G: Declaration of Jaime Arsenault in Support of Plaintiffs' Motion for Preliminary Injunction, *Red Lake Band of Chippewa Indians v. United States Army Corps of Engineers*, 20-cv-3817 (D.D.C. Dec. 24, 2020), ECF No. 2-9.
[175] Exhibit H: Declaration of Michaa Aubid in Support of Plaintiffs' Motion for Preliminary Injunction, *Red Lake Band of Chippewa Indians v. United States Army Corps of Engineers*, 20-cv-3817 (D.D.C. Dec. 24, 2020), ECF No. 2-10.
[176] U.S. Army Corps of Engineers, Enbridge Line 3 Replacement Project, Department of the Army Environmental Assessment and Statement of Findings, 51 (Nov. 23, 2020) [hereinafter *Line 3 EA*].
[177] Jennifer Bjorhus, *Greenhouse gases from Line 3 pipeline raise questions about meeting Minnesota's goals for cutting emissions*, Star Tribune, Mar. 28, 2021, https://www.startribune.com/greenhouse-gases-from-line-3-pipeline-raise-questions-about-meeting-minnesota-s-goals-for-cutting-em/600039485/.
[178] Line 3 EA, *supra* note 176, at 51.

energy independence, national security, and economic development and determined not contrary to the public interest."[179]

The Corps also summarily dismissed many significant environmental justice and treaty rights concerns. Despite the risk of an oil spill, which could "potentially impact or entirely obliterate the cultural and economic value of the wild rice lakes along the proposed pipeline,"[180] the Corps refused to analyze the risks from operation of the pipeline. And in response to concerns over the project's interference with treaty rights to healthy populations of fish, animals, and other natural resources, the Corps responded only by asserting that it "cannot control the entire pipeline construction or operation."[181]

The Corps must revoke the Clean Water Act Section 404 permit because it is contrary to the public interest and because the Corps' public interest determination for the permit was arbitrary, capricious, and unlawful.[182]

Case Study: SPOT Deepwater Port Project

The Corps is currently considering whether to issue Clean Water Act Section 404 and RHA Section 10 permits for the Sea Port Oil Terminal (SPOT) Deepwater Port project (Project), a deepwater port that will include the modification or construction of two onshore terminals, construction of over 140 miles of onshore and offshore pipelines, and the installation of two buoys about 30 nautical miles off the coast of Brazoria County, Texas, capable of loading two Very Large Crude Carriers at a time.[183] SPOT intends to transport and export massive quantities of crude oil (as much as 2.04 million barrels per day)[184] that, when burned, will exacerbate

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[179] *Id.*

[180] Memorandum of Law In Support of Plaintiffs' Motion for Preliminary Injunction at 26, *Red Lake Band of Chippewa Indians et al. v. U.S. Army Corps of Eng'rs*, No. 1:20-cv-03817 (D.D.C. Dec. 24, 2020).

[181] *Id.* at 15.

[182] Additionally, the permit should be revoked for all of the reasons stated in the ongoing lawsuits against it, which we hereby incorporate by reference. *Red Lake Band of Chippewa Indians et al. v. U.S. Army Corps of Engineers*, Case No. 1:20-cv-03817 (D.D.C.); associated case *Friends of the Headwaters v. U.S. Army Corps of Engineers*, 1:21-cv-00189 (D.D.C. Jan. 21, 2021). The Corps should revoke the permit and deny any future applications as contrary to the public interest; to the degree the Corps wished to reconsider the permit, it could not lawfully do so without preparing a full EIS which provides a full assessment of Line 3's climate and tribal impacts, among other issues.

[183] U.S. Army Corps of Engineers, Public Notice of Permit Application SWG-2018-00751 (Feb. 11, 2020), https://www.swg.usace.army.mil/Portals/26/docs/regulatory/PN%20Feb/PN_201800751.pdf?ver=2020-02-11-105702-077.

[184] U.S. Department of Transportation, Maritime Administration, Draft Environmental Impact Statement: Sea Port Oil Terminal Deepwater Port Project (Feb. 2020), *available at* https://www.regulations.gov/document/MARAD-2019-0011-0036, at ES-3; *id.* at 2-1 (noting the mainline crude oil pumps would have "the capacity to push crude oil to the offshore pipelines at a rate of up to 85,000 bph); *id.* at 3-287 ("A maximum of 365 [Very Large Crude Carriers] could be loaded per year"); 85,000 bph × 24 hours/day / 1,000,000 = 2.04 million bpd.

climate change and further damage Texas communities and sensitive ecosystems that are already overburdened by industrial activities.

The Gulf of Mexico still suffers from the impacts of the devastating 2010 Deepwater Horizon oil spill disaster, which contributes to the expanding Gulf dead zone, while being further burdened by new oil spills occurring after Hurricane Ida.[185] The Gulf Coast of Texas is home to one of the largest concentrations of petrochemical facilities in the world. From the "Golden Triangle" area of Orange County to Jackson Counties and, going south, Chambers, Galveston, and Harris Counties, including the City of Houston, and into Brazoria County where the SPOT Project is proposed, there are hundreds of facilities, including oil refineries, plastic manufacturing plants, other chemical facilities, and liquid natural gas ("LNG") facilities. Within one mile of the SPOT Project's proposed onshore infrastructure sites, nearly 75 percent of the 88 block groups had minority populations comprising over 50 percent of the block group's total population, thereby qualifying as environmental justice communities.[186]

Texas Gulf communities have suffered from repeated accidents and upset emissions at oil and gas and petrochemical facilities, exposing them to dangerous levels of chemicals, including carcinogens like benzene. Storm surges and tropical storms are already causing extensive damage in Brazoria County,[187] but climate change is expected to cause hurricanes in the Gulf of Mexico to increase in severity, with an increase in proportion of category 3, 4, and 5 storms, a ten percent increase in cyclone damage for the most intense hurricanes, and a 30–40 percent increase in precipitation, which would exacerbate flooding in the region.[188]

The draft environmental impact analysis prepared by the U.S. Coast Guard and Maritime Administration, on which the Corps intends to rely in deciding whether to issue Clean Water Action Section 404 and RHA Section 10 permits and which will undoubtedly inform its public interest review,[189] does not even disclose let alone analyze the full climate impacts of the proposed fossil fuel export project or its environmental justice harms. In contravention of the National Environmental Policy Act (NEPA) and the Council of Environmental Quality's policy guidance requiring analysis of upstream, downstream, and cumulative greenhouse gas

[185] Hiroko Tabuchi and Blacki Migliozzi, *Oil Spill in the Gulf of Mexico: What We Know*, New York Times, Sept. 7, 2021.
[186] *Id.* at 3-367, 3-371 to 3-372.
[187] Press Release, Texas General Land Office, Nearly $15.6 million granted by Texas GLO for historic disaster mitigation projects in Brazoria County (May 21, 2021), https://recovery.texas.gov/files/programs/mitigation/1-brazoria-county.pdf*;* Melissa Correa, *Surfside Beach, Brazoria County hit hard by tropic storm Nicholas*, KHOU, Sept. 14, 2021, https://www.khou.com/article/weather/surfside-beach-brazoria-county-hit-hard-tropical-storm-nicholas/285-d5056b28-5c9c-4ba3-90c9-c00eeb0a55c2.
[188] Cindy L Bruyère et al., Impact of Climate Change on Gulf of Mexico Hurricanes. NCAR Technical Note NCAR/TN-535+STR (2017), doi:10.5065/D6RN36J3 at 165.
[189] U.S. Army Corps of Engineers, *supra* note 183.

emissions,[190] the analysis asserts that the upstream effects from induced production and downstream effects from the export of crude oil cannot be analyzed because they are "unknown" and will have an "unforeseeable effect."[191] Yet despite government agencies turning a blind eye to the climate impacts of the SPOT Project, outside experts have calculated the lifecycle greenhouse gas emissions associated with the Project to be approximately 367 to 396 million tons of CO_2e every year, about the same as the combined emissions from all major stationary sources of air pollution in Texas in 2018.[192] At full capacity, the SPOT Project would transport 745 million barrels of oil every year—more than oil companies produce offshore in the entire Gulf of Mexico in one year, increasing U.S. crude oil export capacity by over 60 percent. We cannot afford this massive expansion in oil export capacity at a point in time when the science is clear that we must be phasing out fossil fuels. Consequently, the Corps should reject the SPOT Project's application for Clean Water Action Section 404 and RHA Section 10 permits.

In sum, it is clear that whatever benefits fossil fuel infrastructure project proponents may purport to confer, they do not outweigh the public interest in avoiding catastrophic climate change and environmental racism. The Corps must not issue individual permits for fossil fuel infrastructure projects and must revoke permits that it has issued unlawfully.

VII. Conclusion

There are many criteria and procedures the Corps must follow when issuing Clean Water Act Section 404 and RHA Section 10 permits, and many reasons, beyond inadequate consideration of climate impacts and environmental justice in public interest reviews, why these permit approvals are unlawful. While we urge the Corps to review and strengthen its implementation of its many other legal and regulatory obligations, today, for all the reasons discussed above and as detailed in the Notice of Petition, the undersigned organizations ask the Corps to institute a moratorium on the issuance of Clean Water Act Section 404 and RHA Section 10 permits for fossil fuel infrastructure projects; promulgate a rule that fully considers the climate and environmental justice harms of fossil fuel infrastructure projects using the best available scientific information and declares that Corps permits for such projects are contrary to the public interest and shall not be issued; revoke Nationwide Permit 12 as contrary to the public interest; and suspend and revoke individual permits issued for fossil fuel infrastructure projects, including but not limited to those discussed in this petition, as contrary to the public interest.

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[190] *See Sierra Club v. FERC*, 867 F.3d 1357, 1371–75 (D.C. Cir. 2017); National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions, 86 Fed. Reg. 10,252 (Feb. 19, 2021); Memorandum from Christina Goldfuss, Council on Environmental Quality, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews (Aug. 1, 2016), https://ceq.doe.gov/docs/ceq-regulations-and-guidance/nepa_final_ghg_guidance.pdf.

[191] U.S. Department of Transportation, Maritime Administration, *supra* note 184, at 3-292 – 3-293.

[192] Letter from Sierra Club et al. to Yvette Fields, Maritime Administration, & William Nabach, U.S. Coast Guard, Re: Supplemental Comments on SPOT Terminal, LLC, National Environmental Policy Act Draft Environmental Impact Statement, Docket No. MARAD-2019-0011 (June 1, 2020) at 29-31, 42-86 (attached Expert Declaration of Petra Pless).

Because of the urgent nature of the climate crisis and the ongoing harm posed by all fossil fuel infrastructure projects, including but not limited to those referenced herein, we ask the Corps to respond to this petition as soon as possible. If we do not hear from you within a reasonable timeframe, we may seek federal court review.

Any responses and all correspondence related to this petition should be directed to Julie Teel Simmonds, Senior Attorney, Center for Biological Diversity at the email and address provided below.

Respectfully submitted this 6th day of October, 2021.

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1. Center for Biological Diversity
2. 7 Directions of Service
3. Action Center on Race and the Economy
4. Bold Alliance
5. Center for International Environmental Law
6. Giniw Collective
7. GreenFaith
8. Healthy Gulf
9. Honor the Earth
10. Indigenous Environmental Network
11. Louisiana Bucket Brigade
12. Mothers Out Front
13. Movement Rights
14. Oil Change International
15. Port Arthur Community Action Network (PACAN)
16. RISE Coalition
17. RISE St. James

18. Waterkeeper Alliance
19. 198 methods
20. 2degrees Northampton, MA
21. 350 Alexandria
22. 350 Bay Area
23. 350 Butte County
24. 350 Chicago
25. 350 Colorado
26. 350 Colorado Springs
27. 350 Conejo / San Fernando Valley
28. 350 Eastside (Seattle)
29. 350 Humboldt
30. 350 Mass
31. 350 Mass - Berkshire Node
32. 350 Mass Metro North Node
33. 350 New Orleans
34. 350 Sacramento
35. 350 Santa Barbara
36. 350 Seattle
37. 350 Triangle
38. 350Hawaii
39. 350Kishwaukee
40. 350NJ-Rockland
41. 350PDX
42. Action for the Climate Emergency (ACE)
43. ACTS Now
44. Advocates for Springfield
45. Advocates for the Environment
46. Alabama Interfaith Power & Light
47. Algalita
48. Allamakee County Protectors - Education Campaign
49. Alliance of Nurses for Healthy Environments
50. Animals Are Sentient Beings, Inc.
51. Animas Valley Institute
52. Anthropocene Alliance
53. Appalachian Mountain Advocates, Inc.
54. Association for the Advancement of Sustainability in Higher Education
55. Atchafalaya Basinkeeper
56. Athens County's Future Action Network
57. Aviation-Impacted Communities Alliance
58. Azul
59. Backbone Campaign
60. Battle Creek Alliance & Defiance Canyon Raptor Rescue
61. Beloved Earth Community of The Riverside Church
62. Ben & Jerry’s Homemade, Inc.

63. Berkshire Environmental Action Team
64. Beyond Extreme Energy
65. Beyond Plastics
66. Big Reuse
67. Black Warrior Riverkeeper, Inc.
68. Boston DSA Eco-Socialism Working Group
69. Breast Cancer Action
70. Breathe Project
71. Bronx Climate Justice North
72. Bucks Environmental Action
73. Call to Action Colorado
74. Catholic Network US
75. Catskill Mountainkeeper
76. Center for Common Ground
77. Central Bergen Circle of GreenFaith
78. Central California Asthma Collaborative
79. Central Jersey Coalition Against Endless War
80. Change Begins With ME (Indivisible)
81. Cheyenne River Grassroots Collective
82. Choctawhatchee Riverkeeper
83. Christian Council of Delmarva
84. Christians For The Mountains
85. Church Women United in New York State
86. Citizen Power, inc.
87. Citizens Alliance for a Sustainable Englewood (CASE)
88. Citizens Awareness Network
89. Citizens for Clean Air and Water in Brazoria County
90. Citizens' Resistance at Fermi Two (CRAFT)
91. Clean Energy Action
92. Climable.org
93. Climate Action Now Western Mass
94. Climate Advocates Voces Unidas
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99. Climate Justice Alliance
100. Climate Reality New Orleans
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102. ClimateMama
103. Co-Rising
104. Coalition Against Pipelines, Texas Climate Emergency
105. Colorado Businesses for a Livable Climate
106. Columbia Riverkeeper
107. Columbus Community Bill of Rights

108. Columbus Community Rights Coalition
109. Common Ground Rising
110. Communities for a Better Environment
111. Concerned Health Professionals of New York
112. Concerned Residents of Palo Alto
113. Conejo Climate Coalition
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116. Cooperative Energy Futures
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118. Dayenu: A Jewish Call to Climate Action
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126. Earthbilt
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128. Eco-Eating
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134. Electric Transportation Action Group (E-TAG)
135. Empower Our Future - Colorado
136. Endangered Species Coalition
137. Environmental Center of San Diego
138. Environmental Justice Ministry Cedar Lane Unitarian Universalist Church
139. Environmental Protection Information Center- EPIC
140. Extinction Rebellion Massachusetts
141. Extinction Rebellion New Orleans
142. Extinction Rebellion San Francisco Bay Area
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144. Fairbanks Climate Action Coalition
145. Feminists in Action Los Angeles
146. Flight Free USA
147. Florida Springs Council
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150. Foundation Earth
151. Frac Sand Sentinel: Project Outreach
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154. Fridays for Future U.S.
155. Friends of Buckingham
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159. Fund for Wild Nature
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164. George Mason University Center for Climate Change Communication
165. Georgia Conservation Voters
166. Global Network Against Weapons & Nuclear Power in Space
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171. Great Old Broads for Wilderness
172. Greater Boston Physicians for Social Responsibility
173. Greater New Orleans Interfaith Climate Coalition
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181. GRID Alternatives Greater Los Angeles
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183. Haiti Cholera Research Funding Foundation Inc. USA
184. Hands Across the Sand
185. Heirs To Our Oceans
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196. Indivisible Ventura
197. Inland Ocean Coalition

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199. Inspiration of Sedona
200. Institute for Policy Studies Climate Policy Program
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202. Interfaith Power & Light
203. International Marine Mammal Project of Earth Island Institute
204. Jewish Climate Action Network, MA
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207. Kissimmee Waterkeeper
208. KyotoUSA
209. League of Women Voters
210. Live Oak Unitarian Universalist Congregation of Goleta, CA
211. Liveable Arlington
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264. People's Justice Council
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Exhibit G: Declaration of Jaime Arsenault in Support of Plaintiffs' Motion for Preliminary Injunction, *Red Lake Band of Chippewa Indians v. United States Army Corps of Engineers*, 20-cv-3817 (D.D.C. Dec. 24, 2020), ECF No. 2-9

Exhibit H: Declaration of Michaa Aubid in Support of Plaintiffs' Motion for Preliminary Injunction, *Red Lake Band of Chippewa Indians v. United States Army Corps of Engineers*, 20-cv-3817 (D.D.C. Dec. 24, 2020), ECF No. 2-10

Exhibit K: Declaration of Samuel Strong in Support of Plaintiffs' Motion for Preliminary Injunction, *Red Lake Band of Chippewa Indians v. United States Army Corps of Engineers*, 20-cv-3817 (D.D.C. Dec. 24, 2020), ECF No. 2-13