

LITIGATING CLIMATE CHANGE INFRASTRUCTURE IMPACTS

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ABSTRACT—This Essay is the first to examine ways in which the different pathways of climate change litigation—statutory interpretation, human and constitutional rights, and common law—interact with infrastructure impacts. Its analysis draws on a model of these pathways that Professor Jacqueline Peel and I developed in our book *Climate Change Litigation: Regulatory Pathways to Cleaner Energy*. The Essay finds that litigation across all three pathways plays a critical role in shaping how effectively we address infrastructure issues. Petitioners can use these cases to shine a spotlight on infrastructure harms, to push for or against the mitigation and adaptation measures needed to limit harm, and to seek compensation for loss and damage.

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INTRODUCTION

On September 28, 2022, Hurricane Ian made landfall in South Florida after causing significant damage in Cuba. It was one of the most powerful and deadly hurricanes to impact South Florida and caused massive damage to infrastructure, including to roads, the electricity grid, and water supplies.¹ And just days before, Hurricane Fiona caused major damage in Puerto Rico and the Dominican Republic to infrastructure still recovering from the devastating Hurricane Maria.²

Climate change increases the frequency of severe weather events, such as hurricanes and heatwaves, which together with other physical impacts—such as sea level rise and ecosystem changes—create significant and unequally distributed impacts on infrastructure.³ The interactions between climate change impacts and infrastructure fall into three intersecting categories that parallel areas for needed action that the international climate change regime recognizes: (1) decreasing emissions from core infrastructure

¹ See Josh Cascio, *Hurricane Ian Devastates SW Florida: Sanibel Causeway Will Need To Be Rebuilt, Governor Says*, FOX 13 NEWS (Sept. 29, 2022, 1:07 PM), <https://www.fox13news.com/weather/hurricane-ian-storm-surge-damage-fort-myers-naples-southwest-florida> [<https://perma.cc/6F76-NAYC>]; Wyatt Grantham-Philips, *A Path of Destruction: Photos Show Hurricane Ian's Damage in Cuba, Florida, Carolinas*, USA TODAY (Oct. 1, 2022, 11:48 AM), <https://www.usatoday.com/story/news/nation/2022/10/01/hurricane-ian-photos-cuba-florida-carolinas/8150133001/> [<https://perma.cc/9HRC-J337>].

² See Jaelyn Diaz, *5 Numbers that Show Hurricane Fiona's Devastating Impact on Puerto Rico*, NPR (Sept. 23, 2022, 7:46 AM), <https://www.npr.org/2022/09/23/1124345084/impact-hurricane-fiona-puerto-rico> [<https://perma.cc/3VFM-PWN5>].

³ See David Dodman et al., *Cities, Settlements, and Key Infrastructure*, in CLIMATE CHANGE 2022: IMPACTS, ADAPTATION AND VULNERABILITY: WORKING GROUP II CONTRIBUTION TO THE SIXTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 930–35 (Hans-Otto Pörtner et al. eds., 2022), <https://www.ipcc.ch/report/ar6/wg2/> [<https://perma.cc/3CNT-42CZ>]. This Essay, in line with UNITED NATIONS OFFICE FOR PROJECT SERVICES, INFRASTRUCTURE FOR CLIMATE ACTION 13 (2021), <https://www.unep.org/resources/report/infrastructure-climate-action> [<https://perma.cc/547X-YAY6>], defines infrastructure to include energy, transport, water, waste management, digital comms, and buildings. As the report notes:

Infrastructure plays a critical role in enabling long-term development. Despite these benefits, it is responsible for the vast majority of greenhouse gas emissions worldwide, estimated at 79 per cent of total emissions, with most associated with energy, buildings and transport (Figure 2). These originate from various stages of the infrastructure lifecycle: emissions embodied in infrastructure construction materials such as cement and steel; the energy required to transport materials and workers to building sites (sometimes from other parts of the world); operation of the asset itself; and finally, the use of equipment required for its maintenance and eventual decommissioning.

Id. at 12.

(*mitigation*);⁴ (2) preparing infrastructure to be resilient (*adaptation*);⁵ and (3) addressing, through compensation and other assistance, climate impacts that infrastructure cannot protect against (*loss and damage*).⁶

Unequal infrastructure exacerbates differential climate impacts and environmental justice concerns.⁷ For example, when new infrastructure is being created, policymakers should consider how each option impacts greenhouse gas (GHG) emissions, whether it is being constructed in a climate-resilient way, and if its location puts it at risk.⁸ If a severe weather event harms infrastructure, questions emerge about whether to rebuild and, if so, how to address the unequal impacts.⁹ Climate change impacts, including direct infrastructure harm or inadequacy, lead to migration, which, among other impacts, may put additional stress on infrastructure as populations increase in new places.¹⁰

Addressing these intersecting infrastructure concerns is a critical component of needed progress on climate change, and it requires multiple simultaneous strategies. A 2021 report produced in collaboration by the United Nations Office for Project Services, the United National Environment Programme, and University of Oxford finds that “infrastructure is responsible for 79% of all greenhouse gas emissions, and accounts for 88% of all adaptation costs.”¹¹ It also highlights the many categories of infrastructure interacting with climate change—including energy, transport,

⁴ See *Introduction to Mitigation*, UNFCCC, <https://unfccc.int/topics/introduction-to-mitigation> [<https://perma.cc/TT8C-52LB>].

⁵ See *Introduction: Adaptation and Resilience*, UNFCCC, <https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/what-do-adaptation-to-climate-change-and-climate-resilience-mean> [<https://perma.cc/A5DT-7GB4>].

⁶ See *Introduction: Loss and Damage*, UNFCCC, <https://unfccc.int/topics/adaptation-and-resilience/the-big-picture/Introduction-to-loss-and-damage> [<https://perma.cc/5RUA-H6R8>].

⁷ See U.S. GLOBAL CHANGE RESEARCH PROGRAM, 2 IMPACTS, RISKS, AND ADAPTATION IN THE UNITED STATES: FOURTH NATIONAL CLIMATE ASSESSMENT 26 (2021), <https://nca2018.globalchange.gov/> [<https://perma.cc/JJX9-RC25>]; Susan Julius et al., *Built Environment, Urban Systems, and Cities*, in 2 IMPACTS, RISKS, AND ADAPTATION IN THE UNITED STATES: FOURTH NATIONAL CLIMATE ASSESSMENT, *supra*, at 438–78; Rachael Novak et al., *Tribes and Indigenous Peoples*, in 2 IMPACTS, RISKS, AND ADAPTATION IN THE UNITED STATES: FOURTH NATIONAL CLIMATE ASSESSMENT, *supra*, at 572–603; Marccus D. Hendricks & Shannon Van Zandt, *Unequal Protection Revisited: Planning for Environmental Justice, Hazard Vulnerability, and Critical Infrastructure in Communities of Color*, 14 ENV'T JUST. 87 (2021).

⁸ See generally Dodman et al., *supra* note 3 (providing an assessment of the impacts of and adaptation to climate change).

⁹ *Id.* at 960.

¹⁰ *Id.* at 910, 929.

¹¹ UNITED NATIONS OFFICE FOR PROJECT SERVICES, *supra* note 3, at 1.

water, waste management, digital communications, and buildings—and the differential issues for mitigation and adaptation.¹²

These infrastructure challenges have significant security implications as well. The United States Governmental Accountability Office has highlighted flooding, melting polar ice, migration trends, rising sea levels, catastrophic storms, and harm to water, wastewater, and energy utilities as climate impacts that affect national security.¹³ Military and defense planning increasingly takes climate change into account.¹⁴

This Essay is the first to examine the ways in which the different pathways of climate change litigation—statutory interpretation, human and constitutional rights, and common law—interact with these categories of threats to the built environment and the humans who occupy it.¹⁵ Its analysis draws on a model that Professor Jacqueline Peel and I developed in our book

¹² *Id.* at 13.

¹³ U.S. GOV'T ACCOUNTABILITY OFF., GAO-22-105830, NATIONAL SECURITY SNAPSHOT: CLIMATE CHANGE RISKS TO NATIONAL SECURITY (2022), <https://www.gao.gov/assets/gao-22-105830.pdf> [<https://perma.cc/2ACX-QH4B>]. See generally NAT'L INTEL. COUNCIL, NIC-NIE-2021-10030-A, NATIONAL INTELLIGENCE ESTIMATE: CLIMATE CHANGE AND INTERNATIONAL RESPONSES INCREASING CHALLENGES TO US NATIONAL SECURITY THROUGH 2040 (2021), https://www.dni.gov/files/ODNI/documents/assessments/NIE_Climate_Change_and_National_Security.pdf [<https://perma.cc/U3LJ-FT3M>].

¹⁴ See generally DEP'T OF THE ARMY, OFF. OF THE ASSISTANT SEC'Y OF THE ARMY FOR INSTALLATIONS, ENERGY AND ENV'T, UNITED STATES ARMY CLIMATE STRATEGY (2022), https://www.army.mil/e2/downloads/rv7/about/2022_army_climate_strategy.pdf [<https://perma.cc/F6HH-Q2VJ>]; DEP'T OF DEF., OFF. OF THE UNDERSECRETARY OF DEF. (ACQUISITION AND SUSTAINMENT), DEPARTMENT OF DEFENSE DRAFT CLIMATE ADAPTATION PLAN (2021), <https://www.sustainability.gov/pdfs/dod-2021-cap.pdf> [<https://perma.cc/8AQX-8HAS>]; DEP'T OF DEF., OFF. OF THE UNDERSECRETARY FOR POL'Y (STRATEGY, PLANS, AND CAPABILITIES), DEPARTMENT OF DEFENSE CLIMATE RISK ANALYSIS (2021), <https://media.defense.gov/2021/Oct/21/2002877353/-1/-1/0/DOD-CLIMATE-RISK-ANALYSIS-FINAL.PDF> [<https://perma.cc/RC9Z-KTZA>].

¹⁵ Some articles have looked comprehensively at climate change litigation, but not with an infrastructure focus. For analysis of trends in the scholarship on climate change litigation, see generally Jacqueline Peel & Hari M. Osofsky, *Climate Change Litigation*, 16 ANN. REV. L. & SOC. SCI. 21 (2020) (assessing trends in the scholarly literature on climate change litigation and opportunities for future scholarship); Joana Setzer & Lisa C. Vanhala, *Climate Change Litigation: A Review of Research on Courts and Litigants in Climate Governance*, 10 WIREs CLIMATE CHANGE e580 (2019) (analyzing four themes in the scholarship and opportunities for future work). Other articles have had a narrower focus on particular infrastructure cases. See Sanja Bogojević & Mimi Zou, *Making Infrastructure 'Visible' in Environmental Law: The Belt and Road Initiative and Climate Change Friction*, 10 TRANSNAT'L ENV'T L. 35, 37 (2021) (analyzing *Save Lamu v. Nat'l Env't Mgmt. Auth. and Amu Power Co.*, Nat'l Env't Tribunal, NET 196 of 2016, Decision of 26 July 2019 (Kenya), and *Ali v. Fed'n of Pakistan* (2016), petition available at: http://climatecasechart.com/wp-content/uploads/sites/16/non-us-case-documents/2016/20160401_Constitutional-Petition-No.-__-I-of-2016_petition.pdf [<https://perma.cc/W7K6-J5YK>] (pending before the Supreme Court of Pakistan)); Michael Burger & Jessica Wentz, *Evaluating the Effects of Fossil Fuel Supply Projects on Greenhouse Gas Emissions and Climate Change Under NEPA*, 44 WM. & MARY ENV'T L. & POL'Y REV. 423, 427–29 (2020) (analyzing the role of litigation on National Environmental Policy Act's efficacy in evaluating the climate impacts of transport proposals).

Climate Change Litigation: Regulatory Pathways to Cleaner Energy.¹⁶ This model explores both litigation’s direct effects through the outcomes of the cases and its indirect effects through increasing costs and risks and changing social norms and values on government, corporate, NGO, and individual behavior.¹⁷

Over the last two decades, litigation over climate change has grown tremendously around the world—with particularly rapid growth in the years since the December 2015 Paris Agreement¹⁸—and has a substantial regulatory impact. The Grantham Research Institute on Climate Change and the Environment and the Centre for Climate Change Economics and Policy reported in 2022 that:

Globally, the cumulative number of climate change-related litigation cases has more than doubled since 2015. Just over 800 cases were filed between 1986 and 2014, and over 1,200 cases have been filed in the last eight years, bringing the total in the databases to 2,002. Roughly one-quarter of these were filed between 2020 and 2022.¹⁹

As of July 24, 2023, the Columbia University Sabin Center for Climate Change Law’s litigation database contained 1,621 U.S. cases and 865 global cases.²⁰ As climate change cases continue to increase, understanding how they interact with infrastructure is critical.

Since the initial cases in the 1980s and 1990s, the vast majority of U.S. climate change cases have been focused on statutory interpretation or enforcement, particularly under the National Environmental Policy Act (NEPA), the Clean Air Act, and the Endangered Species Act, with a smaller

¹⁶ JACQUELINE PEEL & HARI M. OSOFSKY, *CLIMATE CHANGE LITIGATION: REGULATORY PATHWAYS TO CLEANER ENERGY*, at xi (2015).

¹⁷ *Id.* at 36.

¹⁸ See Paris Agreement to the United Nations Framework Convention on Climate Change, Dec. 12, 2015, T.I.A.S. No. 16-1104. The Paris Agreement is a legally binding treaty that relies on increasingly ambitious nationally determined contributions, which are climate change actions that countries commit to. *Id.* Article 2 paragraph 1(a) of the 2015 Paris Agreement commits parties to limit global average temperature rises “to well below 2°C above pre-industrial levels” and to pursue efforts to limit the rise to 1.5 degrees Celsius. *Id.* at art. 2, para.1(a). Article 4 paragraph 1 of the Paris Agreement contains a commitment to reduce emissions “so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases [i.e., net-zero emissions] in the second half of this century.” *Id.* at art. 4 para. 1.

¹⁹ JOANA SETZER & CATHERINE HIGHAM, *GLOBAL TRENDS IN CLIMATE CHANGE LITIGATION: 2022 SNAPSHOT 1* (2022).

²⁰ See *U.S. Climate Change Litigation*, SABIN CTR. FOR CLIMATE CHANGE L., <http://climatecasechart.com/us-climate-change-litigation/> [<https://perma.cc/F626-TW6V>]; *Global Climate Change Litigation*, SABIN CTR. FOR CLIMATE CHANGE L., <http://climatecasechart.com/non-us-climate-change-litigation/> [<https://perma.cc/8LP5-B95Y>].

number of constitutional law, human rights, and common law claims.²¹ Although a large portion of cases continue to be mitigation-oriented, a growing set of cases focuses on climate change adaptation issues.²² Globally, cases are more diverse, although a substantial number of cases involve statutorily-based environmental impact assessment processes.²³ A significant and expanding set of cases in jurisdictions around the world focuses on human rights or targets major corporate emitters.²⁴ The geography of climate change litigation also continues to evolve, and Professors Jacqueline Peel and Jolene Lin have provided an important analysis of emerging cases in the Global South.²⁵

This Essay considers ways in which the three primary litigation pathways depicted in our model of the impact of climate change have been used and could be used as a tool for mitigating, adapting to, compensating for the loss and damage associated with, and addressing the inequalities of climate change infrastructure impacts.²⁶ In its analysis of each pathway, this Essay examines how some of the most high-profile climate change cases—many of which have had significant direct and indirect regulatory impacts²⁷—interact with infrastructure threats.²⁸

Part II focuses on the statutory interpretation and enforcement cases, some of which are pro-regulatory and some of which are anti-regulatory. These cases highlight infrastructure harms and help shape the ways in which GHG emissions are taken into account in infrastructure projects or what

²¹ See *U.S. Climate Change Litigation*, *supra* note 20. For an empirical analysis of these patterns in some of the initial cases, see David Markell & J.B. Ruhl, *An Empirical Survey of Climate Change Litigation in the United States*, 40 ENV'T L. REP. 10644, 10651–10655 (2010).

²² See *U.S. Climate Change Litigation*, *supra* note 20.

²³ See *Global Climate Change Litigation*, *supra* note 20; *Australian and Pacific Climate Change Litigation*, THE UNIV. OF MELBOURNE, <https://law.app.unimelb.edu.au/climate-change/index.php> [<https://perma.cc/CR7R-DUQK>].

²⁴ See *Global Climate Change Litigation*, *supra* note 20. For example, as of April 2023, the Sabin Center database indicates 122 human rights cases and 124 suits against corporations globally. *Id.*

²⁵ See generally Jacqueline Peel & Jolene Lin, *Transnational Climate Litigation: The Contribution of the Global South*, 113 AM. J. INT'L L. 679 (2019) (analyzing the impact of climate change litigation in the Global South); see also Jolene Lin, *Climate Change Litigation: A View from ASEAN*, CTR. FOR INT'L L. (Sept. 16, 2022), <https://cil.nus.edu.sg/blogs/climate-change-litigation-a-view-from-asean/> [<https://perma.cc/2UY6-982D>].

²⁶ See generally PEEL & OSOFSKY, *supra* note 16 (analyzing the direct and impact of climate change litigation).

²⁷ For an in-depth assessment of the direct and indirect regulatory impact of these cases, see *id.*

²⁸ A comprehensive analysis of how infrastructure concerns interact across climate change cases is beyond the scope of this Essay but would be a valuable future project given the extensive role of infrastructure in both mitigation and adaptation.

regulatory constraints exist upon them.²⁹ Part II examines the constitutional and human rights cases, which address the ways in which climate change impacts, including those from infrastructure, affect people’s rights and the availability of redress for those harms.³⁰ Part III analyzes the common law cases, which include infrastructure issues in framing claims of public nuisance and the damages sought.³¹

This Essay concludes by considering the possibilities and limitations of litigation as a tool for addressing climate change’s interaction with infrastructure. In so doing, it highlights ways in which emerging adaptation cases crosscut the three pathways, building on Jacqueline Peel’s and my 2015 article, *Sue to Adapt?*³² This Essay finds that crosscutting infrastructure issues are key components of the framing and requested action in cases across all three litigation pathways—statutory interpretation, human and constitutional rights, and common law—and that this litigation could play an important role in shaping how effectively we address infrastructure threats moving forward.

I. STATUTORY LITIGATION

This Part considers how the statutory litigation pathway is used to address concerns around infrastructure. This pathway is particularly important to examine because, as noted above, the vast majority of U.S. climate change litigation occurs in these types of cases. This Section examines four primary ways in which arguments about climate and infrastructure issues surface in these cases: (1) infrastructure impacts as part of the harm that needs to be addressed through regulatory action, (2) the extent to which GHG emissions from infrastructure projects are included in environmental review, (3) the authority that administrative agencies have to regulate GHG emissions from infrastructure, and (4) barriers to the creation of more green infrastructure.

As a starting matter, many pro-regulatory statutory interpretation petitions highlight infrastructure impacts in making their case for mitigation actions. For example, in the landmark Supreme Court case *Massachusetts v. EPA*,³³ the harms described by the petitioners included “damage to publicly

²⁹ See *infra* Part I. For a discussion of pro- and anti-regulatory climate change litigation and its interaction with partisan politics, see Hari M. Osofsky & Jacqueline Peel, *Energy Partisanship*, 65 EMORY L.J. 695, 759–68 (2016).

³⁰ See *infra* Part II.

³¹ See *infra* Part III.

³² See generally Jacqueline Peel & Hari M. Osofsky, *Sue to Adapt?*, 99 MINN. L. REV. 2177 (2015) (analyzing potential pathways for U.S. adaptation litigation and lessons it could learn from Australian litigation).

³³ 549 U.S. 497 (2007).

owned coastal facilities and infrastructure.”³⁴ More recently, in *NRDC v. Wheeler*, which challenged the Trump Administration’s decision to suspend a rule that prohibited and restricted hydrofluorocarbons (HFCs), the Opening Proof Brief for State Petitioners similarly argued that “because HFCs are potent greenhouse gases, increased HFC emissions attributable to the SNAP Guidance will harm State Petitioners by exacerbating climate change-related damage to publicly owned property and infrastructure.”³⁵

Some of the statutory interpretation cases involve infrastructure issues more directly. From the start, a significant portion of statutory-based cases in the United States and around the world have involved environmental impact assessments under national- or state-level environmental review processes.³⁶ Beginning with *City of Los Angeles v. National Highway Traffic Safety Administration*—filed in 1986, years before the major growth in litigation—the 629 U.S. cases under NEPA and state impact assessment laws and 236 global cases involving environmental assessment and permitting largely focus on whether GHG emissions from projects have been adequately considered in planning.³⁷

In many instances, these statutory interpretation cases focus on aspects of energy infrastructure, such as new power plants and pipelines.³⁸ These cases impact high emissions infrastructure projects, particularly in the energy sector—which, as the UNOPS/UNEP report highlights, represents 37% of infrastructure GHG emissions³⁹—by making them more expensive and at times requiring changes in projects.⁴⁰ For example, Kenya’s National Environmental Tribunal found violations of its Environmental Impact

³⁴ Brief for the Petitioners at 5, *Massachusetts v. EPA*, 549 U.S. 497 (2007) (No. 05-1120).

³⁵ Opening Proof Brief for State Petitioners at 23–24, *NRDC v. Wheeler*, 367 F. Supp. 3d 219 (S.D.N.Y. 2019) (No. 18-1172).

³⁶ For a discussion of the early NEPA cases, see generally Michael B. Gerrard, *Climate Change and the Environmental Impact Review Process*, 22 NAT’L RES. & ENV’T 20 (2008).

³⁷ *City of Los Angeles v. Nat’l Highway Traffic Safety Admin.*, 912 F.2d 478 (D.C. Cir. 1990); *U.S. Climate Change Litigation*, *supra* note 20 (including cases filed by July 2023); *Global Climate Change Litigation*, *supra* note 20 (including cases filed by July 2023). See generally Gerrard, *supra* note 36 (discussing early NEPA cases).

³⁸ See generally *U.S. Climate Change Litigation*, *supra* note 20 (including numerous examples of statutory interpretation energy infrastructure cases); *Global Climate Change Litigation*, *supra* note 20 (same). For specific examples of these lawsuits, see Bogojević & Zou, *supra* note 15, at 49–50; *Okmoy People File an Administrative Lawsuit to Revoke EIA Report*, GREENPEACE SOUTHEAST ASIA (Apr. 4, 2022), <https://www.greenpeace.org/southeastasia/press/45234/okmoy-people-file-an-administrative-lawsuit-to-revoke-eia-report/> [https://perma.cc/9VP7-BEZU].

³⁹ Dodman et al., *supra* note 3, at 13.

⁴⁰ For a discussion of litigation’s interaction with these projects, see Bogojević & Zou, *supra* note 15, at 52–53; Burger & Wentz, *supra* note 15, at 450–52.

Assessment & Audit Regulations in 2016 and set aside the license for the country's first coal-fired power plant.⁴¹

In this context, litigation also interacts with political transitions and different approaches to project approval between presidential administrations. For instance, in *Powder River Basin Resource Council v. U.S. Department of the Interior*, filed in 2022—which is one of several lawsuits that have been brought over a number of years against oil, gas, and coal projects in the Powder River Basin⁴²—petitioners challenged a major oil and gas project that was approved towards the end of the Trump Administration.⁴³ The Complaint highlights infrastructure GHG emissions in its analysis of adverse impacts: “The Project will lock in staggering amounts of new greenhouse gas emissions from 5,000 new oil and gas wells and supporting infrastructure—at the same time climate scientists are urging an immediate end to new fossil fuel investments. By year ten, the Project will result in 69.5 million metric tons of carbon dioxide equivalent (CO₂e) annually, equivalent to 1.2% of total annual U.S. greenhouse gas emissions.”⁴⁴ It then ties these impacts to its claim for relief under NEPA, indicating the violation of “failing to quantify the cumulative greenhouse gas emissions and climate change impacts of this Project when combined with other future actions” among others.⁴⁵

In addition, many of the statutory cases involve direct regulation of emissions from infrastructure. For example, the Obama Administration relied upon the EPA's endangerment finding following *Massachusetts v. EPA* in its regulation of power plant emissions under the Clean Air Act.⁴⁶ Anti-regulatory litigation challenged those regulations, and ultimately in the 2022 case *West Virginia v. EPA*, the Supreme Court applied the Major Questions Doctrine to hold that the EPA overstepped its authority with its regulation aimed at shifting generation, rather than just emissions reduction

⁴¹ See *Save Lamu v. Nat'l Env't Mgmt. Auth.*, Tribunal Appeal No. NET 196 of 2016, National Environmental Tribunal at Nairobi at 48–49, <http://climatecasechart.com/non-us-case/save-lamu-et-al-v-national-environmental-management-authority-and-amu-power-co-ltd/> [<https://perma.cc/UV9E-3FXZ>]; *Global Climate Change Litigation*, *supra* note 20.

⁴² For example, in August 2022, the federal district court for the District of Montana held in *Western Organization of Resource Councils v. U.S. Bureau of Land Management* that the U.S. Bureau of Land Management had to conduct new NEPA analyses. No. 4:20-cv-00076-GF, 2022 WL 3082475, at *8 (D. Mont. Aug. 8, 2022).

⁴³ Complaint at 1, *Powder River Basin Res. Council v. U.S. Dep't of the Interior*, No. 1:22-cv-2696 (D.D.C. Sept. 7, 2022).

⁴⁴ *Id.* at 2.

⁴⁵ *Id.* at 29.

⁴⁶ See *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66496, 66499 (Dec. 15, 2009).

at particular power plants.⁴⁷ In so doing, the Court acknowledges the potential value of an infrastructure transition away from coal usage: “Capping carbon dioxide emissions at a level that will force a nationwide transition away from the use of coal to generate electricity may be a sensible ‘solution to the crisis of the day.’ But it is not plausible that Congress gave EPA the authority to adopt on its own such a regulatory scheme in Section 111(d).”⁴⁸ This decision provides an important limitation on policy efforts to transition high GHG emissions-producing energy infrastructure but still leaves the EPA with many regulatory options.⁴⁹ Soon after *West Virginia*, Congress passed the Inflation Reduction Act,⁵⁰ and commentators have debated how this legislation interacts with the Court’s decision.⁵¹

Finally, infrastructure issues arise in cases over new clean energy infrastructure projects. Renewable energy projects face substantial regulatory barriers due to state-level legal issues⁵² and legal disputes over them.⁵³ At times, challenges to renewable energy projects even come from other renewable energy companies. For example, in *Allco Renewable Energy*

⁴⁷ *West Virginia v. EPA*, 142 S. Ct. 2587, 2616 (2022).

⁴⁸ *Id.* (citation omitted).

⁴⁹ *Id.* See Alexandra A.K. Meise, *U.S. Climate Commitments in the Wake of West Virginia v. EPA*, ASIL INSIGHTS (Aug. 16, 2022), https://www.asil.org/sites/default/files/ASIL_Insights_2022_V26_17.pdf [<https://perma.cc/KFR7-CT7H>]; UC Berkeley School of Law, *West Virginia v. EPA Explained*, YOUTUBE (July 1, 2022), <https://youtu.be/uio0wr3x2xo> [<https://perma.cc/EK4W-BUGV>].

⁵⁰ Inflation Reduction Act of 2022, Pub. L. No. 117-169, 136 Stat. 1818 (focusing on deficit reduction, prescription drug pricing reform, Affordable Care Act subsidies, and energy security).

⁵¹ See Pat Parenteau, *The Inflation Reduction Act Doesn’t Get Around the Supreme Court’s Climate Ruling in West Virginia v. EPA, but It Does Strengthen EPA’s Future Abilities*, THE CONVERSATION (Aug. 24, 2022), <https://theconversation.com/the-inflation-reduction-act-doesnt-get-around-the-supreme-courts-climate-ruling-in-west-virginia-v-epa-but-it-does-strengthen-epas-future-abilities-189279> [<https://perma.cc/QJ8T-WLT2>]; Dan Farber, *Does the New Climate Law Expand Regulatory Authority?*, LEGAL PLANET (Aug. 29, 2022), <https://legal-planet.org/2022/08/29/does-ira-expand-regulatory-authority/> [<https://perma.cc/LF3M-TJW8>]; Kate Aronoff, *No, the Inflation Reduction Act Did Not “Overturn” West Virginia v. EPA*, NEW REPUBLIC (Aug. 24, 2022), <https://newrepublic.com/article/167520/inflation-reduction-act-overturn-west-virginia-epa> [<https://perma.cc/LQA9-4AYC>].

⁵² See J.B. Ruhl & James Salzman, *What Happens When the Green New Deal Meets the Old Green Laws?*, 44 VT. L. REV. 693, 713–16 (2020) (analyzing the barriers under environmental law faced by renewable energy projects); HILLARY AIDUN ET AL., SABIN CTR. FOR CLIMATE CHANGE L., OPPOSITION TO RENEWABLE ENERGY FACILITIES IN THE UNITED STATES: MARCH 2022 EDITION (2022), https://scholarship.law.columbia.edu/cgi/viewcontent.cgi?article=1186&context=sabin_climate_change [<https://perma.cc/6BSR-F94L>] (providing a state-by-state analysis of regulatory barriers to renewable energy); Michael B. Gerrard, *A Time for Triage*, 39(6) ENV’T F. 38, 40 (2022).

⁵³ In the Columbia Sabin Center database, as of July 2023, 108 U.S. cases address renewable energy in some manner. Search, SABIN CTR. FOR CLIMATE CHANGE L., http://climatecasechart.com/search/?fwp_search=renewable%20energy [<https://perma.cc/H2LY-KBU2>].

Ltd. v. Haaland, solar companies challenged approvals for a major wind project.⁵⁴

Infrastructure issues infuse climate change cases using statutory claims to push for or against regulatory steps that reduce emissions. Harms to infrastructure help to frame many statutory claims, and numerous cases involve environmental review of fossil fuel infrastructure projects, demands for or challenges to regulatory action to reduce GHGs, or efforts to advance or constrain renewable energy projects. Because these cases form the vast majority of climate change litigation in the United States and around the world, they have the potential to play an important role in whether infrastructure reduces or increases GHG emissions and whether we address the impacts of climate change on infrastructure.

II. CONSTITUTIONAL AND HUMAN RIGHTS LITIGATION

This Part examines the role of constitutional and human rights claims in addressing infrastructure threats. Like many of the above-described statutory cases, constitutional and human rights cases focus on threats to infrastructure in making their claims of rights violations that deserve redress. The relief sought varies among the cases but includes a mix of mitigation and/or adaptation action and damages to address harm, some of which directly involve infrastructure.⁵⁵ This Section analyzes infrastructure issues in some of the most significant rights cases to date, recognizing that a comprehensive account is beyond the scope of this Essay.⁵⁶ While the vast majority of these cases involve rights claims against governments—which is the framing in the cases analyzed here—other cases have been brought

⁵⁴ Complaint for Declaratory and Injunctive Relief at 1–2, *Allco Renewable Energy Ltd. v. Haaland*, No. 1:21-cv-11171 (D. Mass. July 18, 2021).

⁵⁵ For a fuller analysis of human rights cases, see generally Jacqueline Peel & Hari M. Osofsky, *A Rights Turn in Climate Change Litigation?*, 7 *TRANSNAT'L ENV'T L.* 37 (2017) (analyzing rights-based climate change litigation and the most promising pathways for future cases); Annalisa Savaresi & Joana Setzer, *Rights-Based Litigation in the Climate Emergency: Mapping the Landscape and New Knowledge Frontiers*, 13 *J. HUM. RTS. & ENV'T* 7 (2022) (analyzing rights-based climate change litigation and assessing knowledge gaps); Brian J. Preston & Nicola Silbert, *Trends in Human Rights-Based Climate Litigation: Pathways for Litigation in Australia*, 49 *MONASH U. L. REV.* (forthcoming 2023), <https://papers.ssrn.com/a=4205303> [<https://perma.cc/5KFN-FX82>] (analyzing trends in rights-based climate change litigation); Pau de Vilchez Moragues & Annalisa Savaresi, *The Right to a Healthy Environment and Climate Litigation: A Game-Changer?*, 32 *YEARBOOK INT'L ENV'T L.* 3, (analyzing the use of the right to a healthy environment in climate change litigation); Nicola Silbert, *In Search of Impact: Climate Litigation Impact through a Human Rights Litigation Framework*, 13 *J. HUM. RTS. & ENV'T* 265 (2022) (exploring the limitations of human rights-based climate change litigation); Larissa Parker et al., *When the Kids Put Climate Change on Trial: Youth-Focused Rights-Based Climate Litigation Around the World*, 13 *J. HUM. RTS. & ENV'T* 64 (2022) (examining youth-focused rights-based climate change litigation).

⁵⁶ See sources cited *supra* note 55.

directly against major corporate emitters, such as the Carbon Majors Petition brought to the Commission on Human Rights of the Philippines.⁵⁷

Human rights and constitutional rights cases have been part of climate change litigation from the beginning—the Inuit’s 2005 petition to the Inter-American Commission on Human Rights was a very high-profile early case⁵⁸—but until the last several years, these cases had limited success.⁵⁹ From the start, human rights cases have highlighted infrastructure impacts throughout their claims.⁶⁰ For example, the Inuit’s petition explained that, “[m]ost Inuit settlements are located in coastal areas, where storm surges, permafrost melt, and erosion are destroying certain coastal Inuit homes and communities. In inland areas, slumping and landslides threaten Inuit homes and infrastructure.”⁶¹ The petition asked for the Commission to find human rights violations and recommend mitigation and adaptation action by the United States.⁶² The Commission declined to process the complaint, explaining that “the information provided does not enable us to determine whether the alleged facts would tend to characterize a violation of the rights protected by the American Declaration.”⁶³ However, the Commission held a hearing on the connections between climate change and human rights, which played a role in the international human rights law development in these linkages.⁶⁴

⁵⁷ See *Philippines Commission on Human Rights Releases Systematic and Searing Indictment of the Carbon Majors; a Stark Warning to the Financial Sector; and a Vital New Tool for Courts and Human Rights Bodies*, CTR. FOR INT’L ENV’T L. (May 6, 2022), <https://www.ciel.org/news/philippines-commission-on-human-rights-releases-systematic-and-searing-indictment-of-the-carbon-majors-a-stark-warning-to-the-financial-sector-and-a-vital-new-tool-for-courts-and-human-rights-bodies/> [<https://perma.cc/F6J8-NQUK>]; *Global Climate Change Litigation*, *supra* note 20 (tracking the evolving rights cases, which to date include substantially more cases against governments); Savaresi & Setzer, *supra* note 55, at 14.

⁵⁸ For an example of the news coverage the case received around the world, see Richard Black, *Inuit Sue US over Climate Policy*, BBC NEWS (Dec. 8, 2005, 6:53 PM), <http://news.bbc.co.uk/2/hi/science/nature/4511556.stm> [<https://perma.cc/HQF2-QEFW>].

⁵⁹ See Peel & Osofsky, *supra* note 55, at 39.

⁶⁰ Petition to the Inter American Commission on Human Rights Seeking Relief from Violations Resulting from Global Warming Caused by Acts and Omissions of the United States at 2, 14, No. P-1413-05 (Dec. 7, 2005).

⁶¹ *Id.* at 6.

⁶² *Id.* at 7–8.

⁶³ Hari M. Osofsky, *The Inuit Petition as a Bridge? Beyond Dialectics of Climate Change and Indigenous Peoples’ Rights*, 31 AM. INDIAN L. REV. 675, 676 (2007) (quoting a letter from A.E. Dulitzky, Assistant Executive Secretary, Organization of American States, to P. Crowley, Legal Rep. (2006)).

⁶⁴ See Marc Limon, *Human Rights and Climate Change: Constructing a Case for Political Action*, 33 HARV. ENV’T L. REV. 439, 441 (2009) (arguing that the Inuit case was among the first to link climate change with human rights instead of looking at it merely as a natural sciences issue); *Campaign Update: Inuit Petition and the IACHR*, CTR. FOR INT’L ENV’T L., <https://www.ciel.org/project-update/inuit->

With increased recognition of climate change by the international human rights system and landmark pro-regulatory decisions *Urgenda v. The State of the Netherlands*⁶⁵ and *Leghari v. Federation of Pakistan*,⁶⁶ human rights cases are rapidly being filed around the world.⁶⁷ The *Urgenda* and *Leghari* cases—which addressed rights in mitigation and adaptation contexts, respectively—also involved infrastructure concerns, although infrastructure was addressed much more directly in *Leghari* than in *Urgenda*.⁶⁸ The *Urgenda* case, filed in 2015, was groundbreaking because the District Court of the Hague, affirmed by the Hague Court of Appeal and Netherlands Supreme Court, ordered the Dutch government to change its current climate change pledge and reduce its GHG emissions to 25% below 1990 levels by 2020.⁶⁹ The District Court decision primarily focused on duty of care but also engaged rights arguments, and both the Court of Appeal and Supreme Court included the European Convention on Human Rights protections in their decisions.⁷⁰ While the Supreme Court decision does not focus explicitly on the term “infrastructure,” its assumptions and facts reference impacts involving threats to infrastructure: “flooding as a result of sea level rise; heat stress as a result of more intense and longer-lasting heat waves, increases in respiratory ailments associated with deteriorating air quality resulting from periods of drought (with severe forest fires), increased spread of infectious diseases, severe flooding as a result of torrential rainfall, and disruptions of the production of food and the supply of drinking water.”⁷¹ Thus, like many statutory cases, *Urgenda* primarily interacts with threats to infrastructure as part of the harm that mitigation should help address.

Leghari, on the other hand, includes both infrastructure impacts due to climate change and infrastructure actions among the adaptation steps being taken in response to the decision.⁷² Here, the Lahore High Court in Pakistan

petition-and-the-iachr/ [https://perma.cc/V8NG-4Q24] (“Though the IACHR did not proceed with the petition, the case established the critical linkage between climate change and human rights . . .”).

⁶⁵ Rb.’s-Gravenhage 24 juni 2015, AB 2015, 336 m.nt. Ch.W. Backes ¶ 2.1 (Stichting Urgenda/Staat der Nederlanden) [The State of the Netherlands/Urgenda Foundation] (Neth.) [hereinafter *Urgenda* District Court Opinion].

⁶⁶ Ashgar Leghari v. Fed’n of Pakistan, (2015) W.P. No. 25501/2015 (Pak.) [hereinafter *Leghari*].

⁶⁷ Annalisa Savaresi and Joana Setzer identified 112 cases as of May 2021 in the world’s largest litigation databases that included human rights claims. See Savaresi & Setzer, *supra* note 55, at 10.

⁶⁸ *Urgenda* District Court Opinion, *supra* note 65; *Leghari*, *supra* note 66.

⁶⁹ *Urgenda* District Court Opinion, *supra* note 65, ¶¶ 3.9, 76; HR [Supreme Court of the Netherlands] 20 december 2019, NJ 2020, 41 m.nt J. Spier (De Staat der Nederlanden/Stichting Urgenda) [The State of the Netherlands/Urgenda Foundation] (Neth.), ¶ 9 [hereinafter *Urgenda* Supreme Court Opinion].

⁷⁰ *Urgenda* District Court Opinion, *supra* note 65, ¶¶ 4.51–4.86.

⁷¹ *Urgenda* District Court Opinion, *supra* note 65, ¶ 2.1.

⁷² See generally *Leghari*, *supra* note 66 (stating that adaptation is “largely the way forward” for Pakistan).

found that the national government's slow implementation of its 2012 National Climate Change Policy⁷³ violated its citizens' fundamental rights.⁷⁴ In 2018, the court reviewed the progress made by the Climate Change Committee that was created pursuant to its 2015 decisions, including its priority actions; 48 of the 211 priority actions involved infrastructure/technology implementation.⁷⁵ Moreover, although the *Leghari* opinion only references the term "infrastructure" with respect to priority actions, its assessment of climate impacts suggests consideration of infrastructure by stating "[t]he above threats lead to major survival concerns for Pakistan, particularly in relation to the country's water security, food security and energy security."⁷⁶

Additional cases around the world have followed the models of *Urgenda* and *Leghari*. They have resulted in additional courts directing their national governments to take greater action to address climate change. For example, in *Neubauer, et al. v. Germany*, Germany's Federal Constitutional Court struck down parts of Germany's Federal Climate Protection Act as incompatible with fundamental rights because it did not establish clear enough targets for emissions reduction beyond 2030.⁷⁷ In doing so, it repeatedly referenced both damage to infrastructure and the development of more sustainable infrastructure.⁷⁸

The most high-profile U.S. domestic case involving rights is *Juliana v. United States*, which claims that U.S. GHG emissions and impacts on youth plaintiffs violate the U.S. Constitution's Fifth Amendment's Due Process Clause, as well as Equal Protection principles embedded in it, the Ninth Amendment's unenumerated rights preserved for the people, and the Public Trust Doctrine.⁷⁹ The initial complaint both addressed infrastructure harms to one of the plaintiffs and GHG emissions from Department of the Interior, Department of Transportation and Department of Defense infrastructure.⁸⁰ It thus highlights infrastructure as an important dimension of both mitigating

⁷³ Government of Pakistan Ministry of Climate Change, National Climate Change Policy (2012).

⁷⁴ *Leghari*, *supra* note 66, ¶ 8.

⁷⁵ Ashgar Leghari v. Fed'n of Pakistan, Order of Jan. 25, 2018, at 20.

⁷⁶ *Id.* at 6.

⁷⁷ BVerfG, 1 BvR 2656/13, Mar. 24, 2021, http://www.bverfg.de/e/rs20210324_1bvr265618en.html [<https://perma.cc/4DZE-Q2H6>].

⁷⁸ *Id.* at 21, 23, 52, 73, 74. For other examples of cases where courts have directed their governments to take greater action to address climate change, see CE Sect., July 1, 2021, No. 427301 [Commune de Grande-Synthe v. France] and Shrestha v. Office of the Prime Minister et al., <http://climatecasechart.com/non-us-case/shrestha-v-office-of-the-prime-minister-et-al/> [<https://perma.cc/ZZ58-BLVT>].

⁷⁹ Complaint for Declaratory and Injunctive Relief at 84–95, *Juliana v. United States*, No. 18-80176, (D. Or. Aug. 12, 2015).

⁸⁰ *See id.* at 23, 43, 47.

and addressing the harms of climate change through adaptation and loss and damage. The Ninth Circuit dismissed the case in 2020⁸¹ and denied the petition for rehearing en banc in 2021.⁸² As of July 2023, the federal district court for the District of Oregon is considering a motion to set pretrial conference following that court's June 2023 decision to allow plaintiffs to file a Second Amended Complaint to address the standing deficiencies found by the Ninth Circuit.⁸³

Another potential path for rights cases to address infrastructure concerns in the U.S. context exists in states that have relevant rights embedded in their constitutions. For example, in Montana, which is one of six states to recognize a right to a healthy environment, a youth-led case, *Held v. Montana*, claims violations of the Montana constitution. The Complaint in *Held* both highlights infrastructure threats faced by plaintiffs and raises concerns with defendants locking in fossil fuel infrastructure.⁸⁴ A state district court allowed the case to proceed to trial, which took place in June 2023, and then ruled in favor of the petitioners in August 2023.⁸⁵ Although the ultimate resolution of this case remains unclear—Montana has indicated it will appeal to the Montana Supreme Court⁸⁶—this decision reinforces that the pathway for climate change litigation based on constitutionally protected environmental rights includes subnational state constitutions.

As these exemplar cases highlight, infrastructure can enter rights arguments in multiple forms depending on the framing of the case. Because infrastructure issues are crucial aspects of mitigation, adaptation, and loss and damage, rights cases play an important role in highlighting infrastructure

⁸¹ *Juliana v. United States*, 947 F.3d 1159, 1175 (9th Cir. 2020).

⁸² *Juliana v. United States*, 986 F.3d 1295, 1296 (9th Cir. 2021).

⁸³ *See* *Juliana v. United States*, No. 6:15-cv-01517-AA (D. Or. June 1, 2023); *Juliana v. United States*, SABIN CTR. FOR CLIMATE CHANGE L., <http://climatecasechart.com/case/juliana-v-united-states/> [https://perma.cc/RD86-EYWQ].

⁸⁴ Complaint for Declaratory and Injunctive Relief at 17, 33, 42, *Held v. Montana*, No. CDV-2020-307 (D. Mont. Mar. 13, 2020).

⁸⁵ *Held v. Montana*, No. CDV-2020-307 (Mont. 1st Dist. Ct., Aug. 14, 2023); David Gelles & Mike Baker, *Judge Rules in Favor of Montana Youths in a Landmark Climate Case*, N.Y. TIMES (Aug. 14, 2023), <https://www.nytimes.com/2023/08/14/us/montana-youth-climate-ruling.html>; Darna Noor, *Groundbreaking Youth-Led Climate Trial Comes to an End in Montana*, THE GUARDIAN (June 20, 2023, 3:10 PM), <https://www.theguardian.com/us-news/2023/jun/20/held-v-montana-climate-trial-youth-end> [https://perma.cc/QL4A-PQSW]; Lucas Thompson, *Date Set for First Youth-Led Climate Trial in U.S. History*, NBC NEWS (Feb. 7, 2022, 10:47 AM), <https://www.nbcnews.com/science/environment/date-set-first-youth-led-climate-trial-us-history-rcna11793> [https://perma.cc/4W5Q-VPU5].

⁸⁶ David Gelles & Mike Baker, *Judge Rules in Favor of Montana Youths in a Landmark Climate Case*, N.Y. TIMES (Aug. 14, 2023), <https://www.nytimes.com/2023/08/14/us/montana-youth-climate-ruling.html> [https://perma.cc/E4UB-CGA3].

concerns and when successful, advancing mitigation and adaptation action that affects infrastructure.

However, rights tools will likely be most effective in addressing these infrastructure issues in jurisdictions that have well-established pathways for bringing these types of claims. Professor Jacqueline Peel and I argued in our 2017 article *A Rights Turn in Climate Change Litigation?*⁸⁷ that the greatest potential for successful human rights cases is through: (1) domestic constitutional rights claims to address mitigation or adaptation failures, particularly in jurisdictions where the constitution explicitly includes environmental rights or has been interpreted to do so; (2) cases in European jurisdictions following the *Urgenda* model making rights claims around inadequate emission reduction targets; and (3) claims in regional human rights tribunals, particularly ones outside of Europe.⁸⁸ This has largely borne out in the rights cases brought in the years since.

We saw more limited potential for constitutional or human rights arguments in the U.S. context despite the high-profile litigation—still ongoing today—in *Juliana v. United States*.⁸⁹ However, the *Held* case suggests that the domestic constitutional rights pathway could apply in a U.S. context for states with constitutional environmental rights protections.⁹⁰ Depending on its final resolution, *Held* could provide a model for additional cases in other states with rights protections.

III. COMMON LAW LITIGATION

This Part analyzes climate change litigation based on the common law's interaction with infrastructure threats. It focuses on cases claiming that climate change impacts constitute a public nuisance, often due in part to infrastructure impacts.⁹¹ Like the statutory interpretation and rights cases, common law cases use infrastructure harms as part of their framing of the problem and at times, of the relief sought. Unlike the other types of cases highlighted in this Essay, the public nuisance cases highlighted below have been brought against major corporate emitters rather than against the government.

⁸⁷ Peel & Osofsky, *supra* note 55.

⁸⁸ *Id.* at 61.

⁸⁹ For a detailed case history of this pending case, see *Juliana v. United States*, *supra* note 83; *Legal Actions: Juliana v. United States, OUR CHILDREN'S TR.*, <https://www.ourchildrenstrust.org/juliana-v-us> [<https://perma.cc/SQ7M-7PY8>].

⁹⁰ See *supra* notes 84–86.

⁹¹ For an analysis of the two waves of public nuisance climate change cases, see Karen C. Sokol, *Seeking (Some) Climate Justice in State Tort Law*, 95 WASH. L. REV. 1383, 1388–1417 (2020). For an analysis of the economic efficiency of these suits, see Victor Flatt & Richard O. Zerbe, *Climate Change Common Law Nuisance Suits: A Legal-Efficiency Analysis*, 49 ENV'T L. 683 (2019).

Although several of the initial climate change cases claimed federal public nuisance, the Supreme Court's 2011 decision in *AEP Co. v. Connecticut*⁹² provided a major setback for those claims. The Supreme Court acknowledged that the EPA found destruction of infrastructure among the dangers of GHG emissions,⁹³ and it held that the federal nuisance claim is “displaced by the federal legislation authorizing EPA to regulate carbon-dioxide emissions.”⁹⁴ However, it declined to address whether state nuisance law claims were preempted—leaving open the possibility for future cases to take this approach.⁹⁵

The *AEP* decision impacted pending federal public nuisance cases including *Native Village of Kivalina v. ExxonMobil Corp.*, filed in 2008, which discusses infrastructure harm as part of the severe climate change impacts that create the need for relocation of this Alaska Native Village.⁹⁶ As the Petition for Writ of Certiorari to the Supreme Court explains:

Due to global warming, this landfast sea ice forms later in the year, breaks up earlier, and is less extensive and thinner, subjecting Kivalina to greater coastal storm waves, storm surges, and erosion. This loss of sea ice threatens buildings and infrastructure on Kivalina with “imminent devastation”—in fact, the village may soon “cease to exist” if it is not relocated.⁹⁷

The Supreme Court denied the petition without comment, leaving in place a Ninth Circuit decision, following *AEP*, that the Clean Air Act displaced this claim.⁹⁸

Over the last five years, state and local government petitioners have brought several state law public nuisance claims against major corporate emitters.⁹⁹ In line with the rapid growth of climate change litigation since the Paris Agreement,¹⁰⁰ these new nuisance cases are far more numerous than the initial ones claiming federal public nuisance.¹⁰¹ These cases have focused in

⁹² 564 U.S. 410 (2011).

⁹³ *Id.* at 417.

⁹⁴ *Id.* at 423.

⁹⁵ *Id.* at 429.

⁹⁶ Complaint, *Native Vill. of Kivalina v. ExxonMobil Corp.*, No: 4:08-CV-01138 (N.D. Cal. Sept. 30, 2009).

⁹⁷ Petition for Writ of Certiorari at 4, *Native Vill. of Kivalina v. ExxonMobil Corp.*, No. 12-1017 (Feb. 25, 2013).

⁹⁸ See *Native Vill. of Kivalina v. ExxonMobil Corp.*, 696 F. 3d 849, 858 (9th Cir. 2012).

⁹⁹ For a discussion of the waves of public nuisance climate change litigation, see Sokol, *supra* note 91, at 1407–09.

¹⁰⁰ See SETZER & HIGHAM, *supra* note 19, at 1–2.

¹⁰¹ See *id.* at 40. The Sabin Center database includes 32 common law cases as of April 2023. *U.S. Climate Change Litigation*, *supra* note 20.

their framing on defendant knowledge of climate change impacts, concealing and denying that knowledge, and continued major emissions despite that knowledge.¹⁰² Their claims include infrastructure harms that result from these emissions. For example, in *Mayor of Baltimore v. BP P.L.C.*,¹⁰³ after detailing that the defendants, all major corporate emitters, had knowledge that they concealed and denied and continued to emit and profit from those emissions, the Plaintiff's Complaint states: "Plaintiff, the Mayor and City Council of Baltimore, along with Baltimore's residents, infrastructure, and natural resources, suffer the consequences."¹⁰⁴

Although the final disposition of these state law public nuisance cases remains unclear, the Supreme Court's April 24, 2023, denial of defendants' Petition for a Writ of Certiorari in *Suncor Energy, Inc., et al. v. Board of County Commissioners of Boulder City, et al., BP P.L.C., et al. v. Mayor and City Council of Baltimore, Chevron Corp., et al. v. San Mateo County, et al., Sunoco LP, et al. v. Honolulu, et al., and Shell Oil Products Co., et al. v. Rhode Island* is an important step forward for petitioners.¹⁰⁵ Defendants' petition argued that federal common law necessarily and exclusively governs these climate change claims and that the federal district court therefore has jurisdiction.¹⁰⁶ The Supreme Court's denial of certiorari allows these cases to proceed in state court.

The common law cases thus parallel the other two litigation pathways in their spotlighting of infrastructure harms in their framing. But they focus on major corporate emitters and the need for monetary relief and damages rather than on actionable steps by the government.¹⁰⁷ The pending state court cases will help to determine whether common law nuisance claims will be an important tool in addressing climate change infrastructure threats.

¹⁰² See Sokol, *supra* note 91, at 1415–17.

¹⁰³ See Plaintiff's Complaint, *Mayor of Balt. v. BP P.L.C.*, No. 24-C-18-004219 (Md. Cir. Ct. July 20, 2018).

¹⁰⁴ *Id.* at 1–2.

¹⁰⁵ See *Suncor Energy, Inc. v. Board of Cnty. Comm'rs.*, No. 19-1330, cert. denied (April 24, 2023); *Board of County Commissioners of Boulder County v. Suncor Energy (U.S.A.), Inc., SABIN CTR. FOR CLIMATE CHANGE L.*, <http://climatecasechart.com/case/board-of-county-commissioners-of-boulder-county-v-suncor-energy-usa-inc/> [<https://perma.cc/H3E7-QZC6>]; *Mayor & City Council of Baltimore v. BP P.L.C., SABIN CTR. FOR CLIMATE CHANGE L.*, <http://climatecasechart.com/case/mayor-city-council-of-baltimore-v-bp-plc/> [<https://perma.cc/7Q4J-SCX2>]; *County of San Mateo v. Chevron Corp., SABIN CTR. FOR CLIMATE CHANGE L.*, <http://climatecasechart.com/case/county-san-mateo-v-chevron-corp/> [<https://perma.cc/82JN-A6BC>]; *City & County of Honolulu v. Sunoco LP, SABIN CTR. FOR CLIMATE CHANGE L.*, <http://climatecasechart.com/case/city-county-of-honolulu-v-sunoco-lp/> [<https://perma.cc/XAM5-E543>]; *Rhode Island v. Shell Oil Products Co., SABIN CTR. FOR CLIMATE CHANGE L.*, <http://climatecasechart.com/case/rhode-island-v-chevron-corp/> [<https://perma.cc/8Y9H-Z3RE>].

¹⁰⁶ See Petition for a Writ of Certiorari at 4–5, *Suncor Energy, Inc. v. Board of Cnty. Comm'rs.*, No. 19-1330 (June 8, 2022).

¹⁰⁷ See *id.*

CONCLUSION

Climate change litigation serves as an important vehicle for contestation over threats to infrastructure. Petitioners use these cases to shine a spotlight on infrastructure harms and to push for or against the mitigation and adaptation measures needed to limit infrastructure threats and to seek compensation for damage.¹⁰⁸ As the above examples indicate, cases have challenged the development of high GHG emissions projects and helped ensure that their climate change impacts were considered.¹⁰⁹ Landmark cases, such as *Massachusetts v. EPA*, *Urgenda v. The State of the Netherlands*,¹¹⁰ and *Leghari v. Federation of Pakistan*,¹¹¹ have led to changes in those countries' regulatory approaches to mitigation and adaptation. Emerging litigation in new jurisdictions and pending litigation, such as the U.S. state public nuisance cases, have the potential to bring additional regulatory change and direct liability for major corporate emitters.¹¹² And whether or not they result in direct impact, cases like the Inuit's petition to the Inter-American Commission on Human Rights¹¹³ and *Juliana v. United States*¹¹⁴ have helped raise public awareness of climate change, including its infrastructure threats, in the United States and around the globe.¹¹⁵ Litigation alone will not fully address the mitigation, adaptation, and loss and damage aspects of infrastructure and climate change, but these cases are an important tool for addressing GHG emissions and impacts.

Although the mitigation cases still dominate litigation over climate change and likely will continue to do so in the coming years, adaptation cases have developed significantly and some cases, such as those brought under the Endangered Species Act, crosscut mitigation and adaptation.¹¹⁶ In *Sue to*

¹⁰⁸ See *infra* Parts I–III.

¹⁰⁹ See *infra* Part I.

¹¹⁰ *Urgenda* District Court Opinion, *supra* note 65.

¹¹¹ *Leghari*, *supra* note 66.

¹¹² See *infra* Part III.

¹¹³ Press Release: Inuit Petition Inter-American Commission on Human Rights to Oppose Climate Change Caused by the United States of America, INUIT CIRCUMPOLAR COUNCIL CANADA (Dec. 7, 2005), <https://www.inuitcircumpolar.com/press-releases/inuit-petition-inter-american-commission-on-human-rights-to-oppose-climate-change-caused-by-the-united-states-of-america/> [<https://perma.cc/SYH9-J829>].

¹¹⁴ See Complaint at 84–95, *Juliana v. United States*, 217 F. Supp. 3d 12224 (D. Or. Aug. 12, 2015) (No. 18-80176).

¹¹⁵ For a discussion of the awareness-raising function of the Inuit petition, see Peel & Osofsky, *supra* note 55, at 47–48 (describing the impact of the Inuit petition on putting the issue of human rights and climate change under the radar of UN human rights bodies, and the media coverage it received).

¹¹⁶ See *Endangered Species Act and Other Wildlife Protection Statutes*, SABIN CTR. FOR CLIMATE CHANGE L., <http://climatecasechart.com/case-category/endangered-species-act-and-other-wildlife-protection-statutes/> [<https://perma.cc/CQ2K-R3S6>].

Adapt?, Professor Peel and I analyzed the nascent U.S. adaptation jurisprudence and ways it could learn from Australian approaches.¹¹⁷ In the eight years since that article was published, cases focused on adaptation cases have grown substantially. As of March 2023, the Sabin Center database categorizes 130 cases as involving adaptation claims, including actions seeking and challenging adaptation measures, actions seeking money damages for loss, reverse impact assessment, insurance, and other adaptation issues.¹¹⁸ These newer cases often include adaptation measures that involve infrastructure, and this emerging jurisprudence can serve as an important tool in trying to force needed action. Moreover, the decision at the 27th Conference of the Parties of the UNFCCC (COP27) in December 2022 to establish a dedicated fund for Loss and Damage reinforces a growing global understanding of the need to address impacts beyond those to which people can adapt.¹¹⁹

However, it is important to recognize that, like in other areas of climate change litigation, not all cases are pro-regulatory. Anti-regulatory cases push against adaptation measures, reinforcing that litigation fundamentally serves as a neutral tool, which only will foster greater regulation if pro-regulatory cases are filed and courts are receptive to them. The disputes over new renewable energy infrastructure, for example, reinforce that role that litigation will play in whether we can move forward with the infrastructure needed for a transition to cleaner energy.¹²⁰ The question of judicial receptivity will be an important one moving forward in the United States, particularly given the shift in composition in the Supreme Court since *Massachusetts v. EPA* and the way in which it constrained agency regulatory authority through the Major Questions Doctrine in *West Virginia v. EPA*.¹²¹

Given the seriousness and scope of infrastructure mitigation and adaptation issues, as well as loss and damage concerns, we need every tool possible. Although litigation is not a panacea and we have work to do in addressing infrastructure in all aspects of addressing climate change, pro-regulatory litigation has fostered—and likely will continue to foster—needed progress on infrastructure issues.¹²² This progress is critical given the

¹¹⁷ Peel & Osofsky, *supra* note 32.

¹¹⁸ See *U.S. Climate Change Litigation*, *supra* note 20.

¹¹⁹ *Five Key Takeaways from COP27*, UNFCCC, <https://unfccc.int/process-and-meetings/conferences/sharm-el-sheikh-climate-change-conference-november-2022/five-key-takeaways-from-cop27> [<https://perma.cc/9QZE-X2DV>].

¹²⁰ See *supra* notes 52–54 and accompanying text for disputes addressing renewable energy.

¹²¹ *West Virginia v. EPA*, 142 S. Ct. 2587, 2616 (2022).

¹²² This Essay focuses on cases that directly raise issues of climate change. However, there are numerous other cases that have implications for climate change and involve infrastructure decisions, which further reinforces the important role of litigation in this context. See Peel & Osofsky, *supra* note

magnitude of the infrastructure issues and their pervasiveness across the climate action that is needed.

15, at 24 (using concentric circles to depict the types of cases that interact with climate change, ranging from core cases with climate change as the central issue to cases that have implications for mitigation and adaptation).